Mutation of Capital in the Information Age: Insights from the Music Industry

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Summary

The question this paper addresses is whether more variety in meaning of capital could increase the value of capital as one of the factors of production. Methodology used is based on observation, and in this stage of research of this phenomenon we believe that detailed observations are needed with aim to provide enough qualitative data for further development of qualitative methods. Based on a case study from the music industry, the authors have tried to determine whether the extensive use of technology, relationship, knowledge and emotions can be used as a resource for value production in today’s economy? These four factors, under complex system analyses of their relationship, could provide enough variety to respond to increasing variety (diversity) developed in music industry environment. In the first part of the paper the on-going rise of importance of intangible values and their relationship with tangible one is discussed. After that, value theories are observed and their relationship to information science is being examined. In the last section, the authors will assert that increasing complexity, coupled (combined/conjoined) with faster changes in the music industry should directly be related to the development of new factors of production used to generate value which can be exchanged on the market. The proposed changes will be tested on a case study.

Key words: general system theory, capital mutation, information economy, music industry, law of requisite variety, value theories
Whereas at one time the decisive factor of production was the land, and later capital – today the decisive factor is increasingly man himself, that is, his knowledge.


Introduction
Recent theoretical considerations in the field of economy have elicited two, at first sight opposite thoughts. One is that managers are only responsible to deliver profits, while the other one focuses more on values, which are intangible and hard to measure. These two different thoughts come from two of the probably most important economists in the last century: John Maynard Keynes and Milton Friedman.

In his book "The General Theory of Employment, Interest, and Money", Keynes says:

"Thus if the animal spirits are dimmed and the spontaneous optimism falters, leaving us to depend on nothing but a mathematical expectation, enterprise will fade and die;—though fears of loss may have a basis no more reasonable than hopes of profit had before"¹

Such thoughts introduce a whole new field of research in social sciences, where everything cannot be mathematically measured. To ask what is an animal spirit, will probably be the same as asking how much does a hard drive with 5 years of family photos cost and how its owner would estimate its value. It has a value which probably cannot be expressed in mathematical terms, but only in relationship with something else. In his probably most cited sentence, "The Social Responsibility of Business is to Increase its Profits"². Milton Friedman suggests that only responsibility of business activity is aimed toward making profit. As profit is tangible, with such a view management of business is only reduced to tangible aspects.

One could say that if business increases its profit, it has a good animal spirit in business organization. Therefore, intangible and intangible aspects of business operations are not opposite, they are complementary phenomenon. To put them in such constellation could give us much broader and better framework for analyzing, researching and measuring the success of companies. Hence, we have to analyze things which are tangible, and their relations, which are executed by humans and/or machines. As relations are intangible and things are tangible,


and humans are subjective – we could look on them as a complex system with dynamical relationships.

Currently the only existing measurement of the company value is what somebody is willing to pay for the company. This process of evaluation is conducted on the free market. Buying shares of one of the Standard and Poors 500 (S&P 500) companies, only 20% is measurable in tangible values, and another 80% is intangible. Such a transaction is based on intersubjectivity of a buyer and a seller.

In order to provide a better picture, we made a brief analysis of the Forbes top ten most innovative companies today whose information can be found on the NASDAQ.

Table 1.

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<tbody>
<tr>
<td>Salesforce.com</td>
<td>31,814</td>
<td>5,528</td>
<td>1.31.2013</td>
<td>17,38%</td>
<td>26,285</td>
<td>26,285</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>142,575</td>
<td>32,555</td>
<td>12.31.2012</td>
<td>22,83%</td>
<td>110,020</td>
<td>110,020</td>
</tr>
<tr>
<td>Intuitive Surgical</td>
<td>14,691</td>
<td>4,059</td>
<td>12.31.2012</td>
<td>27,63%</td>
<td>10,632</td>
<td>10,632</td>
</tr>
<tr>
<td>Apple</td>
<td>429,083</td>
<td>176,064</td>
<td>9.29.2012</td>
<td>41,03%</td>
<td>253,019</td>
<td>253,019</td>
</tr>
<tr>
<td>Google</td>
<td>299,182</td>
<td>93,798</td>
<td>12.31.2012</td>
<td>31,35%</td>
<td>205,384</td>
<td>205,384</td>
</tr>
<tr>
<td>Monsanto</td>
<td>56,973</td>
<td>20,224</td>
<td>8.31.2012</td>
<td>35,50%</td>
<td>36,749</td>
<td>36,749</td>
</tr>
<tr>
<td>Celgene</td>
<td>61,082</td>
<td>11,734</td>
<td>12.31.2012</td>
<td>19,21%</td>
<td>49,348</td>
<td>49,348</td>
</tr>
<tr>
<td>InfoSys</td>
<td>27,718</td>
<td>8,539</td>
<td>3.31.2013</td>
<td>30,81%</td>
<td>19,179</td>
<td>19,179</td>
</tr>
<tr>
<td>FMC Technologies</td>
<td>13,539</td>
<td>5,902</td>
<td>12.31.2012</td>
<td>43,60%</td>
<td>7,636</td>
<td>7,636</td>
</tr>
<tr>
<td>Starbucks</td>
<td>57,369</td>
<td>8,219</td>
<td>9.30.2012</td>
<td>14,33%</td>
<td>49,150</td>
<td>49,150</td>
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</tbody>
</table>

Nidec, which is on the list, is excluded because it’s a holding company.


This table indicates that in only ten companies the actual difference between their assets value and their market value is around 767 billion Euros.

Shapiro and Varian\(^4\) defined term \textit{information delay} as an important factor in the network economy. What they say is that information could increase or re-

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duce its value according to amount of delay in time. Smaller delay – higher value, bigger delay – smaller value. Using information of market value, as a measurement and evaluation tools of company activities, we are addressing one problem – delay of information, and value of this information, as a delay from the moment when some activity is done and that activity reflected in share price could be quite long. The Interplay of value, relationship, humans, machines and profit, could be perceived as a starting point to produce something what is tangible and could be exchanged on the market, by the price which is nothing else but the information about the value that is exchanged. So, to produce something, along raw materials, we have to use our thoughts as well, which are intangible. Therefore anything that enters economy system of exchange already has both, tangible and intangible coded into it. The way how we manage such a complex system of dynamic relations could have direct impact on market value of business organization.

The aim of the paper is to present potential interplays between information and economy. and specifically to determine whether the extensive use of technology, relationship, knowledge and emotions can be used as a resource for value production in today’s economy.

**Theoretical background**

"System analysis of a business enterprise encompasses men, machines, buildings, inflow of raw materials, outflow of finished products, monetary values, good will and other imponderables it may give definite answer and practical advice." – Ludwig Von Bertalanffy.

Not to leave Bertalanffy alone in system approach, we could cite Ronald Coase, who is calling economists to look the economy as a whole system as an object of study, how one part is related to another, how they are interrelated and how they actually work together. Further on, he states that we have to develop sensible analysis of comparison of the additional production and rearrangement of activities with transaction costs.

Rearrangement of activities leads to new relationships which could give new meanings, and meanings define new properties which are then analysed and applied in complex system of dynamic relationship that could lead to new factors of production.

So it looks that they are talking about same thing. About "Whole". About a System. About a dynamic and complex relationship in that system.

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In his book Cybernetics, Norbert Wiener\(^7\) proposed the lesson that any organism is held together by possession of means for acquisition, use, retention and transmission of information and that the means of communication are the most important and most effective. As the book was written more than 50 years ago, it is interesting to see what today's scientist think about such a role of information in today's economy. Wolfgang Hofkirchner in his recent paper\(^8\) is highlighting the importance of having a Unified Information Theory. Here he presents examples of concrete-universal concept as transformation driver in development of capitalism, which are "*sometimes regarded as mutations into different economic system*". In the same example he states that such developments did not replace capitalist principles fully, but modified the essence of it, referencing to the latest notions such as informational capitalism. So, from the proposal of Professor Wiener in 1949 about importance of information for organization, which also may refer to business organizations, to the mutation of capital principle – we could conclude that such a mutation is directly related to the development of the information science. 

In what direction are such mutations appearing? For example, according to Hamel\(^9\), instead of control we should build up a trust. It is much cheaper to build a trust, then a system for controlling employee’s activities. At the same time, building a trust is not a simple formula we could pull out from some classical economic books. It is heavily dependent on intangible part of complex system and involved/associated relationships discussed in this paper. Could you imagine increase of profitability only by smiling and looking into the eyes of employees, with nothing to hide, driven by higher moral values and positive emotions? It would not cost you anything but will increase profitability.

Along with not investing money on the control equipment the quality of working atmosphere is being increased which then leads to better working results and lower costs. So company assets are decreased and liability is increased but we still have better results. It is completely opposite to classical capital formula where capital is assets minus liabilities.

There are a lot of such activities in today's economy, and they certainly have the role in productivity, but somehow they are left outside of the neoclassical economist thoughts.


\(^8\) Hofkirchner, Wolfgang, Emergent Information Some System – Theoretical Considerations About An Integrative Information Concept, *International Journal "Information Theories and Applications"*, Vol. 18, Number 1, Institute of Information Theories and Applications FOI ITHEA, Sofia Bulgaria; 2011

Those are things which are intangible, but they are not labour, nor land, so only what they could be is capital, according to classical factors of production\textsuperscript{10}. A kind of a new mutated capital, which heavily depends on information instead on tangible matter. Such a transition of meaning of capital resulted in change of properties of the capital. This transition happened through complex process of interaction with other entities in system, in different situations, over the time. What Bernard Lietaer \textsuperscript{11} says – for clapping hands we need two hands, one is not enough, and maybe these two hands could be tangible and intangible, going together regardless their possibility to quantify or not.

To develop scope, or lens on how to look at intangible, which is having a role in the process of production of goods or services traded on the market, it is important to understand theories of how value is created. Three important theories can be used as a starting point. One is the theory of \textit{value chain} by Michael Porter\textsuperscript{12} who explains how company produce value by executing the steps of activities in order, where total added value is more than sum of the independent steps or activities. Again, we could refer to the Global System theory which addresses the concept of "Whole", which has more value than sum of its part. To adopt this theory in information age John Sviokla and Jeffry Rayport\textsuperscript{13} developed a concept called Virtual Value Chain, in which, along Porters value chain, an organization should add activities which should produce value out of using information. Again, the sum of total value is higher than the sum of independent steps. For those activities object is information, or bits, or something intangible that is gathered, organized, selected, synthesized and distributed. This theory aligns with proposed view that tangible and intangible should be perceived together. A third theory about value is the \textit{Stake Holders Theory}, written by R. Edward Freeman\textsuperscript{14}, which puts in the focus and other stakeholders in company system environment to produce value. Along resources based view and market based view this theory adds socio-political view. To produce maximum value, companies or their directors have to include all three views in organizing their operations and steering organization system. This theory focuses on relationship inside the system where one company operates by expanding the view outside of legal definition.


\textsuperscript{11} Ulanowicz, Robert E.; Goerner, Sally J.; Lietaer, Bernard; Gomez, Rocio, Quantifying sustainability: Resilience, efficiency and the return of information theory, \textit{Ecological Complexity}, 6, no. 1, Elsevier, Philadelphia, 11.29.2008


\textsuperscript{13} Rayport, Jeffrey F.; Sviokla, John J., Exploiting the Virtual Value Chain, \textit{Harvard Business Review}, Boston Massachusetts; November 1995

\textsuperscript{14} Freeman, R. Edward, Strategic Management: A stakeholder approach, Pitman, Boston; 1984
All three theories have addressed intangible part of doing business, and suggest how to produce more using tangibles. So, combining them may be perceived as a prerequisite for more successful business operations.

### Table 2. System view of theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>System view</th>
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<tbody>
<tr>
<td>Value Chain</td>
<td>Whole</td>
</tr>
<tr>
<td>Virtual Value Chain</td>
<td>Tangible and Intangible</td>
</tr>
<tr>
<td>Stakeholders theory</td>
<td>Dynamic Relationship</td>
</tr>
</tbody>
</table>

Today's modern economies create their revenue or income based on services, (it was 68% in 2005, and industry was only 30%). Why is this important? Because, services are tangible only if sold, and their basic ingredient is information. So actually, dependent on how information is processed, will result in profit and market value.

If we look at the relationship of tangible and intangible as a system, and then use this system as a mean of production then, whatever we produce and enter the economic system has intangible and tangible in it.

So it is important to look them as one, not as separate entities, and even more important, we have to focus on how it is produced and what are the relations in that process.

In the next chapter, the described phenomenon and new perspectives in analyzing intangible dimensions of value creation will be illustrated in the domain of music industry.

**Contemporary definitions of capital and the Music industry**

The Music industry was one of the first which moved from industrial age to digital or information age so it is attractive playground for empirical research. The theoretical frameworks discussed in the previous chapter suggest that it is not only necessary to concentrate on results, but that more analysis is needed regarding how something is done. Therefore, several questions need to be addressed:

- How we use technology available to produce value?
- How organization is driven by emotions?
- How we use relationship to produce value?
- How we apply knowledge in this process?

Let us give a brief example.

If we compare two companies, A and B, both owning a catalogue of 10,000 songs in similar genre and with similar popularity, and company A is not inter-

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15 Memedovic, Olga; Lapadre, Lelio, Structural Change in the World Economy: Main Features and Trends, United Nations Industrial Development Organization, Vienna; 2010

ested in using technology to promote and sell them digitally, corporate culture is
not driven by positive experience and emotional attachment to the music they
have in catalogue, they are not interested in exploring value of relationship they
have built over the years, and they are not acquiring new knowledge how to
conduct the business in digital environment, while company B is doing oppo-
site, using technology, driven by positive experience and emotions, using rela-
tionship to the maximum and developing knowledge. It is not hard to answer to
question which one will have higher market value. This is just a theoretical ex-
ample, and it is used as an explanation, not as a scientific proof. Therefore, it is
reasonable to address the basic classical economic view on factors of produc-
tion, i.e. and they are Land, Labour and Capital10
In his dictionary, The Economist17 is calling capital money or assets put in eco-
nomic use, and it is described as one of the four ingredients of economic activ-
ity, included in factors of production, such as land, labour, capital and enter-
prise, where enterprise is defined as animal spirit of entrepreneur who is able to
mix factors of production to produce something valuable. In other sources cap-
ital is described as a stock of resources employed in the production of goods
and services and that it has many meanings18. This variety of approaches and
viewpoints in defining the concept of capital leads to the conclusion that more
research is needed about the actual definition of the term, especially in the light
of the fact that essence of capitalism mutated under the influence of information
as means of production.
The classical theoretical framework, where factors of production are determined
as land, labour and capital may be questioned based on the following analogy: if
land is space, labour is time and capital is energy, then we may assert that la-
bour as a factor of production is covering relationships between employer and
employee, but creating the playground for such a relationship then could be
called capital.
For the purpose of this paper labour as factor of production has to be interpreted
as an individual skill set, personal values systems, personality and time availa-
ble for organization or corporations to use to produce values. Capital is every-
thing else. If we take two organizations, whose employees interact with the aim
to produce some products or services, if some of the employees left the com-
pany where they are employed, they could take their time with them, but two
companies still have their relationship as capital as one of the factors of produc-
tion.
To put it differently, everything what is not space (or land) where labour spend
their hours (time), could be called capital. And capital could be called energy

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which is needed to produce value exchangeable on the free market. So everything what is used along labour and land, to produce product or service, could be called capital. Following idea of researching process instead of its outputs, leads us to directions suggested by Ronald Coase19:

"The fact of the matter is that economists commonly obtain their theories in the study of industrial organization (and probably elsewhere) as a result, not of examining what actually happened but by thinking about it."

In other words, profit happens, results happen, but why and how it happens is more important and should be researched more in depth. In the case of conceptualizing the music industry system, we suggest to adhere to the classical economic formula of factors of production, focusing on capital. The question is not what the results of using capital to produce value are, but how it is used in complex system, what impacts have positive emotions in the organization, and how to use technology to achieve better results. Along technology and emotions, relationship and knowledge should be researched as factors of production in today's information dependent economy.

So, how then do we have to look at music industry?

Explaining how classical music industry works20 it is defined that the Music industrial system involves aesthetic and industrial production embedded in economic production functions and intermediaries that support different phases. They also stated that production of music is more number of intersecting networks where ideas circulate among firms and individuals then linear activities. Furthermore, the authors stated that the music industry is dominated by only 4 companies, and even in the time of the writing of this paper two of this four merged. So we have Music System which is dominated by only 3 companies. To address such a position in the system we would like again to cite Ludwig Von Bertalanffy and his book General System Theory; "if only few or competing pair are left, conflicts become devastating to the point of mutual destruction"

Hence, the system is in a state of risk of devastation and destruction. Still, it can be rejuvenated; by mutated capital, build on information, resulting in "how" view, instead of "what" view to related production factors, i.e. capital. What we are witnessing is a major development in the music system or environment of the music organization companies in the last 20 years. Good sum-


Mary of those developments are underlined by Knowles\footnote{Knowles, Julian D., A Survey of Web 2.0 Music Trends and Some Implications for Tertiary Music Communities, In Proceedings National Council of Tertiary Music Schools Conference 2007. Music in Australian Tertiary Institutions: Issues for the 21st Century, Queensland Conservatorium Griffith University, Brisbane, Australia, 2007}, who described these changes as follows:

- democratization of the tools for production,
- democratization and diversification of the means for distribution,
- the rise of social networking sites connecting producers and consumers and listeners with shared tastes,
- the infinite catalogue and ‘The Long Tail’,
- an exponential increase in the availability of ‘free music’ through illegal file sharing,
- the arrival of large capacity of portable media devices.

Basically, change in the environment of music system, gave us a lot of variety, and here Ron Ashby's "Law of requisite variety" applies\footnote{Ashby, W. Ross, An Introduction To Cybernetics, Chapman & Hall Ltd, London, 1957, p. 206}, who claims that in order to control variety, variety is necessary. To answer such a development of the variety in music system, organization has to develop new set of business functions which will respond to such a variety. If the system keeps to be ruled by only 3 companies, regarding the General system theory, it is a matter of the day when it will be destructed. But if the new production factors are developed as a response to the increasing variety in surrounding music system, then music system could manage its existence much better. Their variety should come as an output from analyzing complex system of dynamic relations of tangible and intangible, giving us – depending on how deep we are digging – almost unlimited source for system analysis and healthy infrastructure for value production.

\textbf{Case study}

"The primary way a researcher can investigate an educational organization, institution, or process is through the experience of the individual people, the "others" who make up the organization or carry out the process."

To produce the value, we need the factors of production: labour, land and capital. But, meaning/understanding/subject/denotation of the capital mutated over the time. Could we use technology, relationship, knowledge and emotion as a substitute for financial and tangible capital?

This is phenomena we would like to observe, with purpose of gaining knowledge for further research. At this stage only qualitative observing methodology is used.

\footnote{Irving Seidman; Interviewing as Qualitative Research; A Guide for Researchers in Education and the Social Sciences, Third Edition Teachers College, Columbia University New York and London}
To find it out, we interviewed Eli Goldstein from Soul Clap (Boston, USA), musician, DJ and label owner. Soul Clap as a project in the last 7 years has been building quite extensive business operations, including music production, record company and DJ-ing all around the globe. In 2012 they had approximately 120 gigs. They have a major act on leading global festivals.

We have to clearly underline limitations of such an observation because it’s based only on one interview. This is the subject of research of one of the authors PhD thesis and more interviews will be done. This observation could be looked as an experiment or preliminary pilot study, which could be used as a base for further development of more robust scientific apparatus.

As an introduction, the theory discussed above was presented to Eli. Usage of the technology, emotions, relationship and knowledge could be looked/considered as the factors of production and extensions of the meaning of capital used to produce the value.

Here is the transcript of the interview.

Eli and his partner Charles along with DJ-ing back in 2006 started an online blog called Soul Clap, where they used to write about the music they liked, and in that way promote it to the people who share passion for the similar music taste. Soon after the blog they introduced a regular podcast, which was in the early beginning of the podcast days. (What is also important to state, and it is not from the interview but from the researcher observation, they used Ajax technology as soon as it came out on their website. This positioned them as somebody who understands technology well and knows how to use it. Web site was fast and very user orientated.) As Eli says, they had a good knowledge about the music and their passion for the original house music sound was a little bit different than what was considered to be, at that time, mainstream on the independent electronic music blogs around the globe. So, combining knowledge about music, emotionally driven to share it by using advanced technologies for that time such as AJAX and podcasting, they created website which was attractive to visitors. As visitors started to come back for more of what Soulclap had to offer, slowly fan base started to rise, and relations with fans and similar music organization started to develop. As Eli stated, this relationship built through their web site was a foundation for promotion of their music production. Such a development of the fan base and popularity of the web site encouraged Eli and his partner to leave the business they had started with a third partner, which was also related to the music event promotion and mobile DJ-ing. Guided by positive feedback as high emotional driver they have decided to go to the studio and produce only the music, without being worried about business operations they use to run.

Original audio recording available on request
This situation had a huge impact on their positive emotions which they channelled to produce even better music, by using available technology. When they got enough material they started looking for a company which will release that music. Apparently, as they were active in Boston as a DJs, their friends were starting a record label Air Drop at that time, Eli and his partner decided to release music on their friends’ label, since they have had a relationship with them before. At the same time their music production skills have developed and knowledge level rose, so combining deep knowledge about old disco records, they started to do re-edits (updated versions of the old tracks). Through their web site, and building relationship with other music organizations, they have developed a relationship with Wolf and Lamb as well, music organization from Brooklyn, New York. As both of them shared the same emotions for such a musical format and style (disco re-edits) they started to develop collaboration. Eli stated that in that phase Skype had a very big role for the development of this relationship, enabling them to build a relationship with no cost at all.

In 2009 their re-edit was released on Wolf and Lamb. Also followed the podcasts for Wolf and Lamb website. So to make it all happen till here, they have only used technology, relationship, emotions and knowledge. It is also important to say that those four factors in their mutual interaction multiplied produced value. One lead to another. In 2009 Airdrop organized a small tour for Soul Clap in Europe, and this was actually their first exposition for global electronic dance music market. An outcome which really surprised Eli and Charles was that people in European clubs recognized music from the Wolf and Lamb podcasts they have done. They have been asked to play tracks from those podcasts and that kind of music which was not usually played in clubs in Europe, especially with the knowledge and style of DJ-ing they developed in US. Probably the first big appearance was in Berlin club Watergate, which is accepted as an electronic dance music institution globally. What makes this important is that they got booked using their existing relationship with DJ Heidi who was just at that time starting her own night in the same club. As their DJ set was well received cause of deep knowledge of rare and forgotten records, re-edited just for purpose of playing it in their own DJ sets. They were immediately approached by few bigger booking agencies in Europe. This opened up the next step in their operations and put them in higher league of performers with higher income. When they got back to US they agreed upon doing all business using Skype with no costs. By then, their value system has developed, and it has involved two US companies and booking agency in Europe, and all of them were sharing technology, relationship, emotions and knowledge to create value for everybody involved. Eli stated that as all of these factors now used by bigger system are starting to multiply. In 2011 Soul Clap and Wolf and Lamb together done DJ Kicks compilation (one of the best-selling DJ mix compilations in the world) and again they put together knowledge about music, relationship (with network of music organizations), emotions (passion
for the music) and technology (to promote with low cost). For the compilations they have selected the artists they were working with, what actually gave them additional value and expanded value system they operate in. After that compilation in 2011 they had about 120 international gigs around the globe.

Interviewer asked – is it important to keep all of these 4 factors in balance, to keep the system growing (if you do not develop one of the factors, could the whole system be affected) Eli answered positively and added that he experienced that a lot of musicians were not able to keep up with growth just because of not developing it in a balanced way. To conclude, in the interview Eli was asked about approximate number of gigs in 2011 and 2012, and did Soul Clap along with using technology, relationships, emotion and knowledge do some major financial investment in their business operations. He completely agreed that building such an extensive business operations was done only by using those four factors without financial investment, and that they could even make more money out of gig as demand is bigger but also price per gig rises, but they are very aware of the risk of misbalancing those factors because of extensive touring. But the income they have generated opened up the new business opportunity which can grow even further.

As a conclusion Eli says: "It is still business, we have to remember it is business, but embracing intangibles along, such as passion, love and fun, and not focusing on business side so much."

Conclusion
At one hand we have situation where complexity of relationship between tangible and intangible in one system, could increase variety of the system, and by this, better respond to development of variety in environment where business is conducted. Also, regarding the conducted case study we open Pandora’s Box of what is new mutated capital as a part of factors of production, and how it could be used in the information age to produce value, products and services which are then exchanged on the free market for real money. We hope that phenomena researched in this paper, that money could be made without actually having money as a capital investment, is interesting enough for further research and constructive criticism. It is not that this phenomena is new, it has existed in the information age from the beginning, and as we know Google and Facebook started as a projects in student rooms as well. Writing this paper and conducting research we found a huge variety in the meaning of capital. And this is something what should be researched deeper, from both objective and subjective perspective. The aim was to propose new research framework, which takes into consideration four factors – technology, emotions, knowledge and relationship – which could be analysed as capital in the age of information, and how they work in complex system of today’s business. Authors understand that this is preliminary small scale research, and it has limitations because of only one interview subject. Research should incite the development of precise tools of
measuring how such factors are actually used, including exploration, description, explanation and valuation scientific methods.

Acknowledgments
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