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New Production Factor in Economics – Innovation and the New Economy

1. New Economy

Changing in Terminology

Famous economists have started to mention recently a new economical stream, the so called New Economy which puts production into brand new frames after the industrial capitalism. Even more of them argue that the last 20 years have made critical and significant structural changes in terms of economical production and the hegemony of the old trinity of land-capital-labor seems to be falling down. (LANDFELD, 2000). Many favourable conditions has contributed to change the industrial capitalism into something different. In the economic centers the real GDP is skyrocketing, such as the production efficiency, productivity, the profitability and the investment inclination is increasing while the rates of inflation and the unemployment seems to get lower as the income distribution is smoothening and there is a long-term boom in stock markets. All these changes have basicly changed the economic space with all the effect of globalisation, stimultion of international competition and the many new advanced management methods which cause cost reduction and efficiency in the long run (LANDFELD, 2000).

The new economy and the accompanying favorable economic conditions it have been the subject of considerable attention in the media, on Wall Street, among economists, at central banks and in government agencies. Although some seem to take it on faith that there is a permanent change in the economy powering the current expansion and stock-market climb, many are scouring economic statistics for evidence on the importance of this new economy to economic performance and whether there really has been a fundamental and lasting change in the structure of the economy. (LANDFELD, 2000).

The term “new economy” was developed by the economy press to nominate two trends in world economy which can be observated pretty nice for a certain time (SHEPARD, 1997).

The first one is the business globalisation. That means that after the collapse of socialism capitalism rule the world. Simply explained, this means that, after the collapse of socialism, capitalism is spreading around the world. Markets are being introduced, and trade and capital flows are being deregulated. International trade and investment now play a greater role in each country’s economic policy than 15-20 years ago. (POHJOLA, 2002).

The second trend is the revolution in information and communication technology. Its driving forces are rapid improvement in the quality and sharp decline in the prices of ICT equipment and software, the convergence in communication and computing technologies and the swift growth in network computing. The ICT revolution has been going on since the invention of the transistor in the late 1940s. But given that computer prices have been declining at rapid rates for the past 50 years, what makes the late 1990s so different from the earlier periods that the use of the phrase ‘New Economy’ is justified. Three explanations can be given. First, a technological breakthrough seems to have occurred in the mid-1990s in semiconductor manufacturing as this industry shifted from a three-year product cycle to a two-year one (JORGENSEN, 2001).

Is That Real?

Among the central questions being asked about the new economy are: Is it real, or is it an illusion of measurement? Does it represent a fundamental and lasting change in the structure of the economy, or is it the result of a number of temporary phenomena? Can we accurately measure the new economy?

The answers to these questions are important because if it is real, structural, and likely to last, then there are major implications for: tax and spending projections; the funding and allocation programs; technology policy; regulations, laws, and tax rules affecting saving; investment in physical and human capital, R&D, financial markets, and the Internet; understanding of the sources of growth and productivity. (LANDFELD, 2000).

However we can still ask what can be that factors in economics characterising new decade in economy. The real price depression ? ICT prices have been falling since the 1960, so that cannot be adequate answer. So what else? Three answers seem to be:

First, a technological breakthrough seems to have occurred in the mid-1990s in semiconductor manufacturing as this industry shifted from a three-year product cycle to a two-year one. (JORGENSEN, 2001).

The second explanation is the increase in network computing due to the rapid diffusion of a widespread information infrastructure - the internet. It is in fact the first truly global marketplace and hence the factor that links together the two broad trends defining the New Economy, namely the globalization of business and the revolution in information and communication technology. The Internet is integrating markets and linking together people across all kinds of traditional boundaries. (POHJOLA, 2002).

The third explanation for the interest in the NE is the fact that labour productivity appears to have picked up in the United States in the mid-1990s. The growth of output per hour worked in the non-farm business sector accelerated from around 1.4 per cent per annum before 1995 to 2.5 in the period 1995-2000. It is interesting that service industries seem to have accounted for much of this acceleration. For example, wholesale and retail trade as well as telecommunication services have all had increases in labour productivity which are greater than for the economy as a whole. In their survey of the debate, Baily and Lawrence (2001) conclude that IT innovation has been driven by the demand for improved technologies in the using industries and that in the United States competition in the service industries, often on a global scale, has encouraged them to seek out new technologies to improve their own productivity. (POHJOLA, 2002).

Innovation – Knowledge – ICT

In the pursuance of my research I deduce the new production factor – innovation out of corporative knowledge and obtained to answer how affect this knowledge at organisations on innovation inclination and ability, how affect the employment-knowledge on innovation potential. I examine the cause of innovation distribution: researching the main cause of innovation inclination and potential.

2. Empirical Research

Path-model

Making the research I have used among the usual firm-questionnaires a special one for all experts of a company to examine the expert competences.

I have used two kinds of questionnaires in the following chapters and gained more than 150 statistical variables:

1. General data
2. Human resources
3. Creditors & debtors
4. Innovation
5. Financials
6. Management
7. Expertcompetences

The so-gained statistical substance after some forthcalculations consists of 179 variables as a total. During the research my base assumption was the path modell, built out of five regression models with 23 variables. After the adequate calculations the significant modell is created with the significant paths, and the level of “R” is also indicated with a 95% of significancy level representing the strong and avarage connections.

ICT has a two way assumption on innovation potential. This is the two additive part of the Pearson-linear-rank-zero correlation coefficient.

So let’s see what are the consequences drawn from the path modell. Indicated in figure 3.

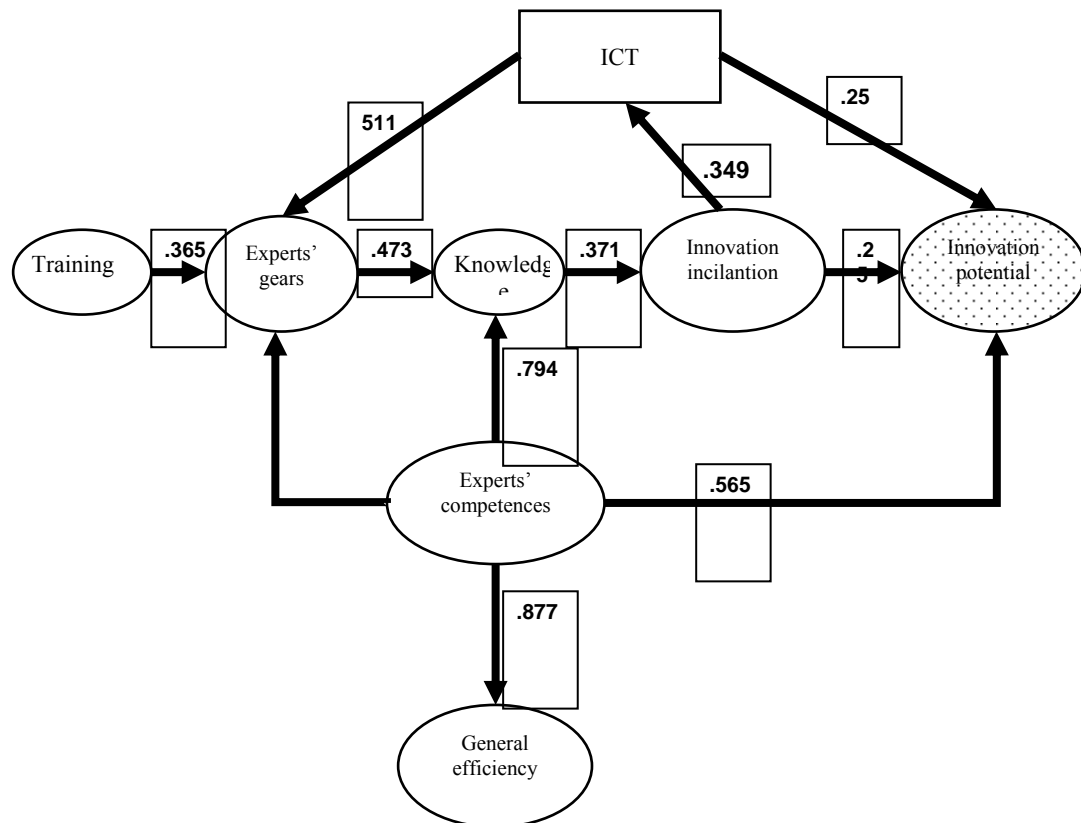


Figure 3: Significant connections in my path modell indicated the intensity

As all of the correlation coefficients are greater than zero, arrows represent cause and effect situation. That means that ICT engagement has a direct link to the innovation potential through the expert gear of a company leveraged the knowledge as well. If I cut out the concerning part of the modell, the following figure is arisen which gives a better adaptation of the above mentioned cause-effect connections.

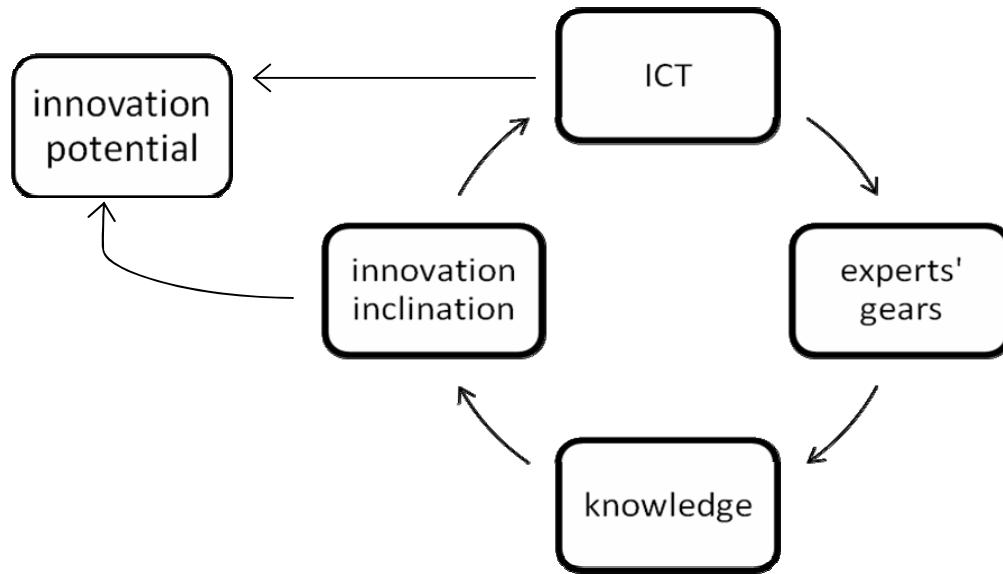


Figure 4: Casualty extract from the path model

Innovation Obstructives

The second great part of my research is the innovation obstructives. I would like to prove my hypothesis that says: not all kind of innovation needs financial cover. For this problem I had to make differency between sorts of innovation, and I used factor analyse as a method for this and the following datas were extracted with the factor component weight indicated:

Soft innovation	•New production method	0,810
	•New market acces	0,704
	•New acquring markets	0,778
Hard innovation	•New product/service	0,549
	•New organisation	0,883

Figure 5: Factors of created innovations (KMO=0,610; $\chi^2=37,141$; sig.=0,000)

Hard Innovation

Detecting the innovation barriers I did a K-mean-cluster analysis. In the first session hard innovation and financial barriers are involved as statistical variables. The clusters came out of four centers, and the separated cluster number is also four which is shown below.

The most interesting group for us is the 4th with its 33 firms this is the congestion point of the graph. It means, that those firms who has financial obstructives are not able to manage and adopt innovations.

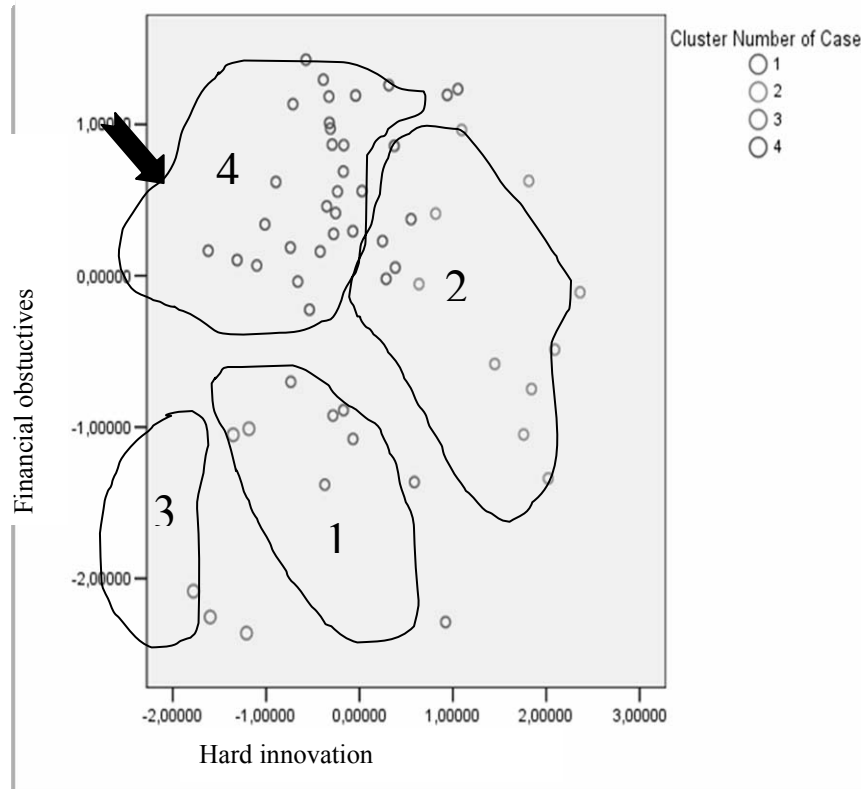


Figure 6: Hard innovation and financial obstructives

Soft Innovation

Doing the same methodology with the same parameters on soft innovation the picture has changed. The following clusters are drawn:

Members of the first cluster are keen on doing innovation as they have no financial obstructives. The second cluster members cannot manage innovations, however no financial barriers exist in their lives. The third group can manage and adopt innovations nevertheless hard obstructives they have. But these are “only” soft innovations.

Comparing the congestion points at the two above graph we can make an important conclusion: hard innovations are money indicated, but soft ones need not as more financials as hard ones.

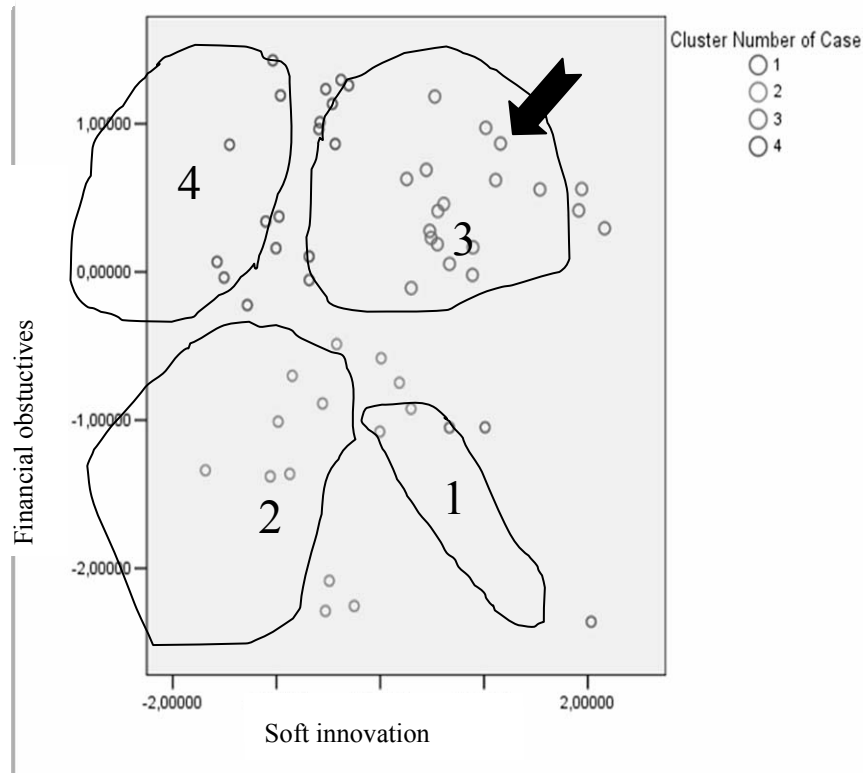


Figure 7: Soft innovation and financial obstructives

3. Leadership styles and Innovation

Lewin's Leadership styles

Kurt Lewin and colleagues did leadership decision experiments in 1939 and identified three different styles of leadership, in particular around decision-making.

Authoritarian Leadership (Autocratic)

Authoritarian leaders provide clear expectations for what needs to be done, when it should be done, and how it should be done. There is also a clear division between the leader and the followers. Authoritarian leaders make decisions independently with little or no input from the rest of the group.

Researchers found that decision-making was less creative under authoritarian leadership. Lewin also found that it is more difficult to move from an authoritarian style to a democratic style than vice versa. Abuse of this style is usually viewed as controlling, bossy, and dictatorial. Authoritarian leadership is best applied to situations where there is little time for group decision-making or where the leader is the most knowledgeable member of the group.

Participative Leadership (Democratic)

Lewin's study found that participative (democratic) leadership is generally the most effective leadership style. Democratic leaders offer guidance to group members, but they also participate in the group and allow input from other group members. In Lewin's study, children in this group were less productive than the members of the authoritarian group, but their contributions were of a much higher quality. Participative leaders encourage group members to

participate, but retain the final say over the decision-making process. Group members feel engaged in the process and are more motivated and creative.

Delegative (Laissez-Fair)

Researchers found that children under delegative (laissez-fair) leadership were the least productive of all three groups. The children in this group also made more demands on the leader, showed little cooperation, and were unable to work independently. (SZINTAY, 2004).

In this aspect the distribution of firms is as follows. The democratic style has almost a 2/3 hegemony and half of it is autocratic. Delegative style has only 11%.

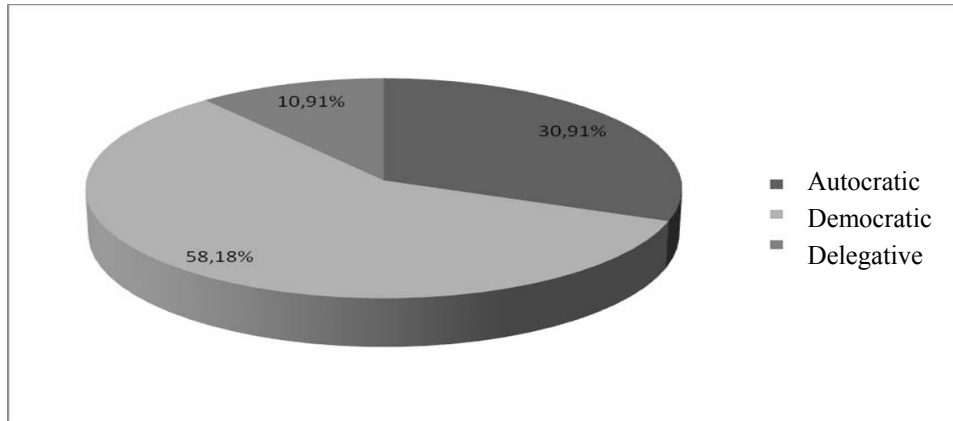


Figure 8: Lewin's styles distribution

Looking at the leadership styles and the total created innovations the following graph can be drawn.

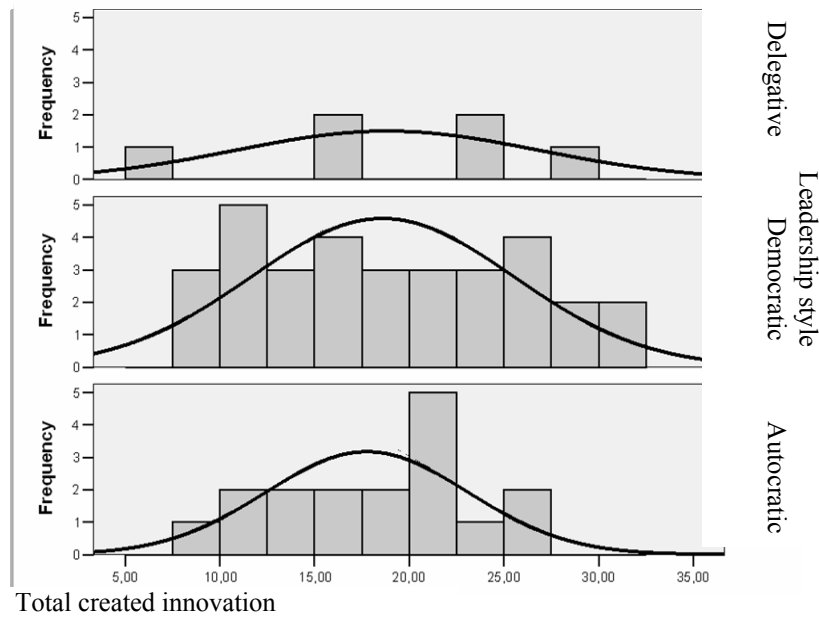


Figure 9: Lewin's styles and innovation

It nicely seems, that democratic firms can produce the greatest amount of innovation while autocratic style firms are on the third place.

Hersey and Blanchard leadership styles

This form of leadership changes to reflect the situation. This is because situational leadership theories believe that a leadership style will be more effective if it can be tailored to the situation. In the Hersey and Blanchard model the leader changes their style to suit the follower/direct report.

Hersey and Blanchard divided leadership styles into four types. In each of the leadership styles, the amount of direction and support (provided to the follower) is different;

- S1 Telling/Directing; the follower is monitored closely by the leader, their tasks are defined by the leader and the leader will make decisions. Communication is one way. Support is low as the follower's commitment is high.
- S2 Selling/Coaching; the leader defines tasks and will make decisions but they invite suggestions from the follower. Communication is two way. Support and direction is high to overcome the follower's lack of competence and commitment.
- S3 Participating/Supporting; the follower will make daily task decisions although the leader will still facilitate decision making. As competence is high, the leader provides little direction. However as the follower needs encouragement, support from the leader is high
- S4 Delegating/Observing; the follower will make decisions and decides how and when to involve the leader. As the follower is highly competent and committed they need little support and direction from the leader.

supportive behavior	high	style #3 Participating	style #2 Selling
	low	style #4 Delegating	style #1 Telling
		low	high
		guidance/task behavior	

Figure 10: Hersey & Blanchard leadership model

Source: Dr. Szintay István: Vezetéstudomány

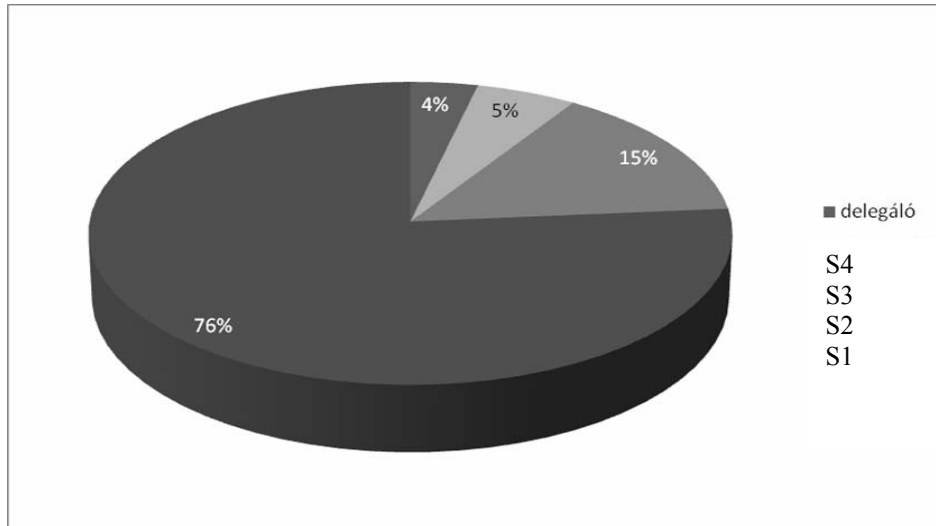


Figure 11: Distribution of firms regarding to innovation potential

Nominating the leader style of the asked firms we can draw the below arrangement of management styles within those companies.

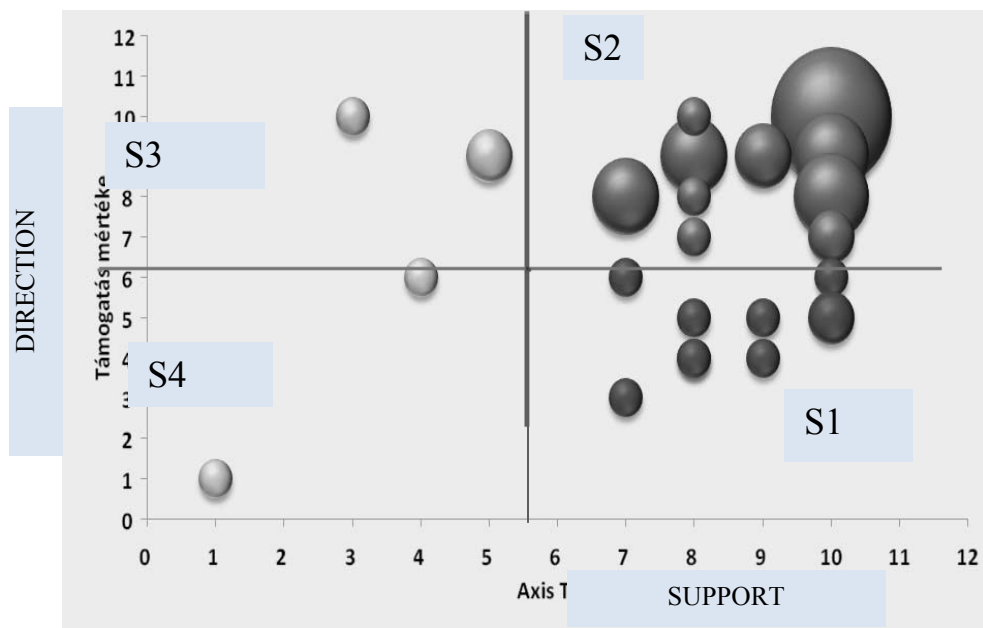


Figure 12: Hersey & Blanchard count of asked firms

It finely seems that S2 has a massive majority (size of the balles in each cell represent the number of firms regarding to that grid). The places of extra axes have been calculated by some statistical methods of median of the variable.

Table. 1: Hersey & Blanchard Leadership Styles and Innovation Potential

			Innovation potential			Total
			low	medium	high	
Hersey & Blanchard leadership styles	delegating	count	1	1	0	2
		% within style	50	50	0	100
		% within Inno.pot.	3,45	6,25	0	3,64
		% within total	1,82	1,82	0	3,64
	participating	count	2	0	1	3
		% within style	66,67	0	33,33	100
		% within Inno.pot.	6,90	0	10	5,45
		% within total	3,64	0	1,82	5,45
	telling	count	8	0	0	8
		% within style	100	0	0	100
		% within Inno.pot.	27,59	0	0	14,55
		% within total	14,55	0	0	14,55
	selling	count	18	15	9	42
		% within style	42,86	35,71	21,43	100
		% within Inno.pot.	62,07	93,75	90	76,36
		% within total	32,73	27,27	16,36	76,36
Total	count	29	16	10	55	
	% within style	52,73	29,09	18,18	100	
	% within Inno.pot.	100	100	100	100	
	% within total	52,73	29,09	18,18	100	

4. Blake-Mouton Managerial Grid

Concern for People – This is the degree to which a leader considers the needs of team members, their interests, and areas of personal development when deciding how best to accomplish a task.
 Concern for Production – This is the degree to which a leader emphasizes concrete objectives, organizational efficiency and high productivity when deciding how best to accomplish a task.

Using the axis to plot leadership ‘concerns for production’ versus ‘concerns for people’, Blake and Mouton defined the following five leadership styles.

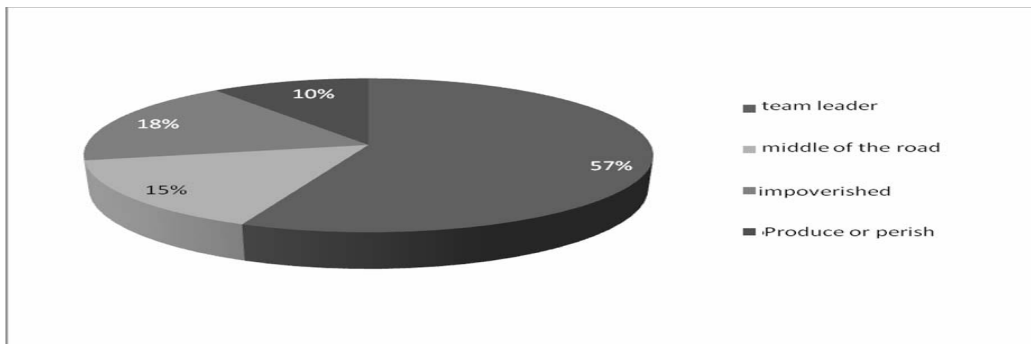


Figure 13: Blake-Mouton managerial grid

Source: Dr. Szintay István: Vezetéstudomány

More than half of the asked companies (57%) has a team leader, other styles have uniform distribution among the rest of the firms.

concern for people	high	Country club management Most concerned about the needs and feelings of members of his/her team. Work environment that is very relaxed and fun but where production suffers due to lack of direction and control.		Team leader Pinnacle of managerial style. Creates a team environment based on trust and respect, which leads to high satisfaction and motivation and, as a result, high production.
	medium		Middle of the road Balance of the two competing concerns. Neither production nor people needs are fully met. Settle for average performance.	
	low	Impoverished Leader has neither a high regard for creating systems for getting the job done, nor for creating a work environment that is satisfying and motivating. The result is a place of disorganization, dissatisfaction and disharmony.		Produce or perish Employee needs are always second-dary to the need for efficient and productive workplaces. This type of leader is very autocratic, has strict work rules, policies, and procedu-res, and views punishment as the most effective means to motivate employees.
		low	medium	high
concern for production				

Figure 14: Blake-Mouton distribution of asked firms

Table 2: Blake-Mouton styles and innovation at SMEs

			Innovation potential			Total medium
			low	medium	low	
Blake-Mouton leadership styles	team leader	% within style	50	31,82	18,18	100
		% within Inno.pot.	52,38	63,64	57,14	56,41
		% within total	28,21	17,95	10,26	56,41
	middle of the road	% within style	33,33	33,33	33,33	100
		% within Inno.pot.	9,52	18,18	28,57	15,38
		% within total	5,13	5,13	5,13	15,38
	impoverished	% within style	71,43	14,29	14,29	100
		% within Inno.pot.	23,81	9,09	14,29	17,95
		% within total	12,82	2,56	2,56	17,95
	produce or perish	% within style	75	25	0	100
		% within Inno.pot.	14,29	9,09	0	10,256
		% within total	7,69	2,56	0	10,256
Total	% within style	53,85	28,21	17,95	100	
	% within Inno.pot.	100	100	100	100	
	% within total	53,85	28,21	17,95	100	

5. Summary

Question can be raised: have we really entered into a new decade of economy? Can we call this change ICT or hi-tech revolution, where the old product factors has only a supplementary role and new one take the hegemony? The answer is a massive YES and the mentioned new factor is innovation. I have showed in my research – hereby only a short draft is indicated – what is critical in adapting innovation: susceptibility and commitment.

According to Larry Summers rector of Harward University the NE is based on old values: such as thrift and investment, but principally – just let the market operateing.

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