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**Survey of male and female pupils to evaluate their affinity (attraction) towards
the topics:**

- Technologies and their Utilization**
- Entrepreneurship**

Timeframe: September / October 2014

Client:

ATI erc gGmbH within the framework of the South-Baltic-Project "So-BaTo – Southern Baltic TechnOlympics"

Contractor:

FacilityPlan GbR





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1. Objective target and methodical procedure

1.1 Procedure

To make the results of the survey comparable the german and the polish projectpartners agreed to use mostly the questionnaire created by the polish partner. The questionnaire was provided by the polish partner in the English language and translated into the german language. Due to the translation some minor adaptations had to be made.

Following working steps were agreed content of the offer regarding (Nr. A14-08-04) on the 13.08.2015:

- Translation of the questionnaire (Template in the English language by the client)
- Printing of the survey documents
- Selection of the target group (age bracket, type of school, etc.) in reconciliation with the client
- Agreement on deadlines , Briefings
- Execution of the interviews, instruction of the pupils for the completion of the questionnaire
- Consolidation and evaluation the survey results
- Overall consideration and development of recommendations or further approach of actions

The goal of the survey was to question and to evaluate the affinity of young people towards the topics technology and entrepreneurship and how they approach the range of subjects.

To determine connected causalities, the survey started out with questions regarding the personal environment and a self-evaluation about different environmental settings.





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In that way the survey should determine, if there are distinct correlations referring the affinity towards technology and the living conditions (place of residence, qualification of the parents, people living in a household).

1.2 Range of the survey

According to the contract, 120 male and female pupils were asked in the survey. The total number of female and male participants (in the following evaluation called non-gender-specific participants) was 160. Experiences showed that not all questionnaires are filled out meaningful or correctly. The survey took place in schools in Schwerin, Wismar, northwestern Mecklenburg and Ludwigslust. To the benefit of the survey there had been cooperating structures in this area by the client to fall back on. The survey contained the evaluation of questionnaires from 76 participants from Schwerin, 24 participants from the city of Wismar, 8 participants of northwestern Mecklenburg and 12 participants from Ludwigslust.

Respectively one half of the participants were female and the other half were male to get a comparable database to perform the evaluation.

1.3 Personal background of the questioned male and female pupils

1.3.1 Location of the Survey

The survey took place in four locations in Mecklenburg Western Pomerania. This is a sparsely inhabited area of Germany with a low corporate landscape. The northeast part of Germany has a long agricultural history and is characterized by the fact that most of the former larger companies closed down during the period of the German reunification followed by just a small business structure that grew afterwards.

Schwerin is the state capital of Mecklenburg Western Pomerania with a population of 93.000 people.





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As the location of the state government the city is strongly influenced by the administrative structure.

The Hanseatic city of Wismar has a population of 50.000 people and is as a historically grown Hanseatic city characterized by a vivid economic growth. Due to the location near by the Baltic sea it was possible to attract larger economic settlements of medium sized businesses. The University with almost 4.000 on campus students and 3500 long distance students strongly contributes to a vital city. Northwestern Mecklenburg and Ludwiglust/ Parchim are counties with an agricultural history but they largely benefit from industrial parks near by the interstate highway A24.

Through the selection of different locations the survey examined, if the place of residence has a significant Influence on the examined affinities.

1.3.2 Evaluation of the financial situation

The evaluation of the financial situation of the participants showed a wide allocation. Six of 120 participants rated their situation as very bad, 23 participants rated their situation as bad and 42 rated their situation as fair. 32 participants felt their financial situation was good and three even said very good. 14 participants did not state any information to this topic.

Interpretation:

As expected, the declaration of the personal situation as bad stands closely in correlation with the statement of the unemployment status of the parents. The majority of the participants were satisfied with their financial situation, which leads to the statement that most of the young people don't have a problem with the fact that the average regional salary level is lesser compared to the total German average.



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1.3.3 Number of people in a household in addition to the participant

Interpretation:

In most of the households of the participants there are 3 people living together. Not questioned was the fact if the other two persons were mother and father or one parent and a sibling. Statistically proven is the fact that the majority of households consist out of two parents and one child followed by one parent and two children. Even more children is a rare situation. This was confirmed through the evaluated answers.

Most of the young people stated the opinion that they will be able to actively participate in shaping their own future.

1.3.4 Evaluation of the opportunities to influence

The participants were asked: "How strong will your future depend on you?"

Interpretation:

The young people assumed that they will be in charge of their own future. This shows a high degree of awareness for an active participation and individual initiative.

In the interviews the young people spoke out as followed:

"If you don't care about certain things, it is possible to quickly lose the connection to the top and you will not find a good job."

"I want to decide on my own, what kind of profession I want to work at for eight hours a day. Therefor I need a good education and skills."

1.2.5 Education of the parents

The education of the parents from the participants showed a heterogenic image.





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Education of the father:

A predominantly amount of the fathers had a finished vocational training followed by the fathers with a technical college or university degree.

Education of the mothers: (diagram)

If we take a look at the education of the mothers the vocational training is also in the first place and in an even higher number.

The vocational training stands in direct correlation to the profession of the parents. In Germany, lateral entry employees and career changers in upper or advanced positions are uncommon due to the special conditions in the German Labor Market.

1.3.6 Professions of the parents

The collected information and data on the topic reflect a strong service oriented working environment in Mecklenburg Western Pomerania.

Profession of the father: (diagram)

Profession of the mother: (diagram)

As interviews showed, it's often the case that the performed profession is not always the profession acquired during the vocational training. This is the result of the structural change in the economy in this area during the time period of the reunification Germanys.





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1.3.7 Requirements for a successful living

The young people made in terms of importance of the requirements for a happy and successful life predominant corresponding evaluations. 95 percent of the participants made the statement that health is the most important requirement, followed by friends and freedom. On the fourth place follows a good profession which is tightly related with the followed factor income and money. Children and marriage are in the lower ranks of the evaluation.

Interpretation:

The young people learn by birth through their family circle, that health is the most important premise for a happy life. Naturally, friends are ever more important reference persons for the participants at this age. For this reason it's not surprising that friends were selected straight away on rank 2. Likewise it's not surprising, that a good job was placed at the top of the ranking. The youth is aware of the connection between a good job, happiness in the job and a good income. The reason for that is, that the parental home and the school communicate these values.

1.3.8 Spare time activities of the participants

The participants were asked about their hobbies. It was conveyed that the most important extracurricular activity is to meet friends.

Ranking of information about preferred hobbies:

1. Meet friends
2. Listen to music
3. Sports
4. Use of personal computer
5. Television
6. Travelling
7. Reading





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8. Sleeping

Interpretation:

Once again the important role of friends as a conversational partner and reference person is approved. The interests for music and sports are indicators for an interest of culture. The use of personal computers is only ranked on place 4. This may mean that the use of personal computers rather pertains to everyday life than it is considered as a hobby. Online games are expected.

2. Result of the survey

2.1 Numerical display of the answers followed by an interpretation

2.1.1 Interest in technologies

The interest in technologies overall was rated from 52 of 120 sampled persons as moderate. That means nearly the half of sampled persons in the survey followed this evaluation. 18 estimated their interest as very low – 12 of 18 are female. 16 persons estimated their interest in technologies rather low. On the other hand 8 persons indicated big interest and 13 expressed a huge interest. 6 persons, solely female, said there is no interest, absolutely.

Interpretation:

In conversations it became obvious, that for the **youth** it's hard to identify with the term "technologies", because they rather link this term to high-technologies; e.g. biotechnology, genome research etc. This could be a reason for the non-committal information about the interest.

Regarding the total lack of interest, there was ascertain a correlation to the gender of the sample. Absolutely no interest was noted solely among female persons.





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2.1.2 Utilization of information technologies

Most of the young people use information technologies in terms of Smartphones, Tablets and PCs. On rank 2 the youth stated to play online games, but also 3D-print and apps/programs are of interest.

Interpretation: For the young people smartphones are normal means of communication and belong to everyday life. Also the threshold of using the internet, especially playing online games, is low. Because it's a barrier-free way to communicate and play with other youngsters. Like interviews revealed are games against friends preferred in comparison to games with unknown or against PC-programs.

2.1.3 Capabilities

The majority of the young people assess their capabilities of the use of technologies at an average level (68 of the sample). 20 said their capabilities are better and 6 valued their skills as very low.

Interpretation:

Information technologies are a part of everyday life for the participants. The ability to use them is considered as normal. Insofar it's not a big surprise that most of the young people choose an average rating.

2.1.4 School and information technologies

As reported only a third of the youngsters see the use of information technologies as a part of school education. The other two-thirds stated to use technologies rather in their leisure time. Nevertheless the pupils evaluated the knowledge regarding technologies taught in school as very useful. Only 14 percent of asked people said they see no or less sense in it.





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Interpretation: The school seems not be the place, where information technologies are used on a large-scale. Conversations with pupils stated that they see the age and the skills of teachers using information technologies as a critical limiting factor. But the majority wishes to use more of information technology related offers/solutions.

2.1.5 Acquisition of knowledge and skills

A proven remedy for the acquisition of knowledge in the area of using information technologies seems to be the principle of trial and error. Asked people stated to do their own experiments. But also 65 percent admitted that asking for help is also a proved method.

According to the opinion of the pupil, teachers come off badly in this area. Pupils stated that only 2 percent of them searching for help by teacher.

12 percent of the pupils stated, they acquired knowledge and abilities in this area through internships.

Interpretation: The majority stated to get knowledge and abilities in the area of information technologies with the principle of trial and error. The assessment is approved, that the youth expect self-explaining programs/applications. Most of them experienced, that you can get suitable solutions through creative testing. If this is not the case, peers are serving as an information source and support. In this question teacher are evaluated badly again. In this area are less competences attributed to teachers.

2.1.6 Internet usage

In everyday life of young people information technologies are mostly used to communicate in the social media, to do research on websites and listen to music.





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2.1.7 Entrepreneurship

The estimation if they ever needed or used entrepreneurial abilities was very difficult for the participants. 12 percent of them weren't able to make a point. 30 percent had the opinion, that they already experienced situations where entrepreneurial abilities were needed. The situations are mostly referred to the development of solutions have to be found. The majority was related to "sale" something; e.g. presentations or homework.

Interpretation: In the first instance entrepreneurial abilities were put on a level with "selling" something. A lot of them mentioned to need entrepreneurial skills to present their "product homework". However the majority of the survey does not see the "production" of the "product homework" as an entrepreneurial performance. This could be related to the less extent of creative performance which is demanded through homework.

2.1.8 School and entrepreneurship

Only 16 percent of the participants said they have acquired entrepreneurial abilities/attributes in school. Here again the extracurricular area plays the crucial role. 48 percent of participants said they have acquired entrepreneurial abilities out of school. In each case 18 percent said they have no interest in such question or can't make a point. This number seems to be high.

A quarter of the survey gave as a source for learning entrepreneurial abilities to do an internship. The daily lessons seem to be less successful.

Two-Third of the pupils stated to use study visits at companies, have done internships or the schools were visited by entrepreneurs. Theory, workshops and other activities organized by school were only named by 10 percent of the survey.

52 percent of the survey estimated the influence of schools to the development of entrepreneurial qualities is medium. 10 percent stated it



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bad. Anyway 30 percent have seen positive or very positive influences.

Role models can have an importance in the area of entrepreneurship. Therefore people were asked if they have contact with entrepreneurs in their setting (family, friends). 58 percent said they have regular contact to entrepreneurs.

2.1.9 Plans after the completion of school

After finishing school 46 percent of the survey wants to combine continuing learning and a job. 8 percent wants to continue their education. 32 percent wants to finish their education at this point.

Interpretation: The wish of the youngsters to earn own money and also to achieve more freedom – e.g. own car, own apartment etc. is very big. In particular pupils in the 12th and 13th grade have the wish to establish themselves in working life. A whole series of pupils is planning to continue learning and own money parallel.

2.1.10 Future workplace

Asked about their desired employment and preferred kind of company, people favor a job in a governmental enterprise or institution.

Following ranking revealed:

1. governmental enterprise/ governmental institution
2. big private company
3. small private company
4. launch of a own company
5. no idea

Interpretation:

Big governmental companies are seen as the safest employer. Furthermore a lot of youngsters are targeting to rise within the compa-





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ny's hierarchy. On the second rank are private companies. Again the size of a company is put on a level with security. The employment takes clear priority in comparison to launch an own company. Because in case of launching an own company, people often have no clear idea of the daily routine of an entrepreneur. In addition a sustainable business concept is missing.

2.1.11 Change of residence

50 percent of asked people show the willingness to change their residence for an attractive job. The other half would prefer a job at their hometown or home federal state.

Interpretation: Conversation with the asked people stated to the willingness to work outside of their hometown or their home federal state exists. The youngsters are seeing a disadvantage to leave their circle of friends.

2.2 Ascertained possible correlations

It was investigated, if there are correlations between the affinities to technologies, their use and entrepreneurial interest to the gender, residence, education/employment of parents and number of person in the household.

2.2.1 Correlations regarding the gender

It can be assumed that there is a correlation between the gender and the affinity towards technologies. The survey shows that the female participants a lower affinity than the male participants.

2.2.2 Correlation regarding the residence

Dependent on the residences of asked pupils, no significant correlations could be pointed out. The access to information technologies



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and companies was given at all four locations. That could be the crucial point that there are no significant differences were identified.

2.2.3 Correlation in dependency towards the evaluation of the financial situation

The estimation of the financial situation was often in correlation to the working life of the parents. A correlation of the affinity to technologies or entrepreneurship could not be identified.

2.2.4 Correlations regarding education of the parents/ profession of the parents

In this case a correlation can only be supposed. If the parents, especially the father, is working in a technical job or is self-employed, there is a higher affinity for technical issues etc. You can assume that the parents cover a role model function. In addition you can assume that parents care about a clear imagination of their area of profession.

2.2.5 Correlations regarding number of people living a in the household

No correlations could be ascertained between number of persons in a household and the affinity for technologies and entrepreneurship.

3. Summary and recommendations

Overall the survey stated high openness of the youth for technologies. Concerning this matter the abilities and the knowledge are mostly acquired in school. The offered contents taught in school seem to be insufficient and improvable.

The teachers are not recognized as qualified person in this area. The wish of steady continuing education of the youth should be encouraged. The importance of this fact should be emphasized more.





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Regarding entrepreneurship the statements were rather restrained. Reason for this might be the insufficient imagination of this topic. This is caused by the missing contact with entrepreneurs in everyday life. Right here a lively imagination and effective role models play a decisive role.

Following recommendations can be suggested as a result of the survey:

Encourage qualification and a steady advanced training of teacher and trainer at schools. Thereby teacher/trainer could discuss the use of technologies on a par with pupils.

Encourage and foster cooperation between school and companies. In this way you could take advantage of the possibilities, that pupil can experience and deploy technologies in action.

Encourage the application of information technologies in the frame of school education. You should use new media depending on each pupil's technical education/knowledge.

The development of new teaching methods on the basis of information technologies is recommended.

Increasing the offers of additional training and qualification measures based on mutual learning is recommended.

Intensifying the support of exchange/mutual conveyance of knowledge and abilities among the pupil is recommended.

It is recommended to strengthen the presentation of technical job images with the possibilities of experiencing and testing.

It is recommended to strengthen the youth's individual initiative. Give more area of freedom for the youth and let them develop their own ideas.





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Inclusion of entrepreneurs as role models in the frame of school education and demonstrate successful entrepreneurships. Furthermore it's recommended organizing more study visits at companies, round of talks and experience exchanges.

Moreover it's important to appreciate more the extracurricular engagement of pupil. Therefore it's imaginable to present these successes and initiatives in school.

Likewise it's recommended developing assistance measures to motivate especially girls. Show them application possibilities in the frame of topics, where girls already have an affinity.

