Dear iimt friends,

The institute celebrated its 20 years anniversary on the 1st of October 2015, and it is my privilege, as its Director since more than 15 years, to address you some words. At the beginning, the situation was the following: the liberalisation of the telecom sector was at hand and the former monopolist PTT wanted to support its - technically highly trained – employees with a high-quality education for the open market conditions. The founding idea was a joint venture between PTT and the University of Fribourg. Future oriented and innovative personalities were the ones who gave the following vision: to create an institute focused on the transfer of management skills known and used in private global companies to the coming generation of telecom managers.

Today, the market for continuing education is a highly competitive international market and as a niche provider it becomes more and more difficult. We must face this challenge and strengthen our excellence. This includes to be even more active internationally, to attract new partners, students and lecturers. Moreover, we want to continue to develop the lifelong learning.

The iimt is a complex structure, which is constantly changing, yet needs to be kept in shape, lives with its networks, generates new ideas, evolves old ones, identifies timely trends and new developments and most importantly always keep the people in the focus of our activities. All this is, of course, only possible with open-minded people, like you, alongside with us. My heartfelt thanks to all: Government and University representatives, Members of councils, alumni, students, lecturers as well as partners and donors, with whom our paths crossed in one way or another during the last two decades, and steadily developed, improved or supported our activities. Thank you very much for your endless efforts and your support. To have the privilege to count on your motivating words, your critical remarks and your valuable friendship, is an accelerator for us, we hope for the next 20 years!

Prof. Dr. Stephanie Teufel
Director iimt

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News

ideas@iimt: J. Inhelder presented his idea
New staff members

iimt anniversary celebration

20 years of further education & research

Events

iimt Masterclass
Leaders Launch 2015

Chair

Competence qualification in dealing with cyber risks
Energy Efficient Technologies - Crowd Energy Applications

Partners

SmartCity goes Municipality: Transparency for Renewable Energy Co-operatives

Shortcuts

Save the date!

Leaders Launch 26.11.2015
Next Courses 05.-22.01.2016
**ideas@iimt: J. Inhelder presented his idea**

An ideas@iimt fellow, Jedidja Inhelder, presented his idea « My City » to 30 interested persons, during the Inno Apero in Biel. In this workshop, further applications for My City were discussed. The result: 300 new ideas. Together with Gassmann Media AG and Liquid Works GmbH, Jedidja will now examine which out of these 300 ideas can be integrated in My City, and in what form.

Visit ideas@iimt website!

**New staff members**

The iimt welcomed two new staff members, who will work for the smart living lab project; the smart living lab is a center for research and development dedicated to the built environment of the future (see esignal 2014_4 for more information). The iimt staff is looking forward to working with Jovita and Timeja, and wishes them a good start.

**Dr. Jovita Vasauskaite** was born and grew up in Kaunas, second biggest city of Lithuania. She was granted with a Bachelor in mechanical engineering, a Master in economics and international trade, and, finally, she holds a PhD in economics. In her research, Jovita successfully combined technological background with the knowledge of economics and management, analysing the decision-making of technological innovation implementation in the industry.

**Mrs. Timeja Veresinska** was born in Ukraine and raised in Bavaria, Germany. She graduated with a Bachelor of Science degree in International Business Administration; she is now undertaking a Master of Arts in European Business, where Timeja has completed an internship in Corporate Product Sustainability. During that time, she was responsible for a Green Building Project, which was also the subject of her bachelor thesis.
The iimt – 20 years of further education & research

The iimt celebrated its 20 years anniversary on Thursday the 1st of October; around 150 guests gathered in the NH Hotel in Fribourg. Government and University representatives, Founding and active members of the institute council and advisory board, former & current students, subject area coordinators and lecturers as well as partners and donors, former & current staff and colleagues, all friends of the iimt were present in order to celebrate this jubilee.

After the opening speech of the iimt Director, Prof. Dr. Stephanie Teufel, who narrated the iimt’s foundation’s history, Dr. Beat Vonlanthen, State Councillor Fribourg, explained the importance of innovation and education in the economy. Prof. Dr. Astrid Epiney, Rector of the University of Fribourg, addressed to the iimt her best wishes, and finally, Walter Steinlin, President of the iimt Institute Council, explained how basic technologies grow exponentially.

Following those official greetings, the guests were delighted by the speech of Prof. Dr. Kathrin Altwegg, who demonstrated how small and insignificant we are in the universe – “we are only stardust!”. The time travel continued with Dr. Jocelyne Imbach, former Vice-Director, who brought the audience back into the past, telling some funny stories and anecdotes about her time at the iimt. Before closing the ceremony with a magical highlight, Prof. Dr. Teufel took a look into the future - into the crystal ball.

The guests had afterwards the opportunity to pamper themselves with a good glass of wine, a refreshing beer, some food, and to share some good memories. They also took the opportunity to see some highlights from the past and present by visiting the iimt poster exhibition.

It was a pleasure to see so many friends of the iimt attending this magical event in a great atmosphere. The iimt is looking forward to achieving its goals and be a successful competence center for the next 20 years.

Discover more pictures of the event on the next page, and on our website.
Business-driven IT (architecture) - How to consolidate your post-merger IT

Top Speaker - Kai Wiesmann
Managing Consultant at Campana & Schott

The last iimt Masterclass of the year took place on the 11th of November 2015 at the iimt - University of Fribourg. Top Speaker Kai Wiesmann explained that patchwork may be a good design principle in some parts of our life but it certainly isn’t when it comes to the IT architecture. Working with 200 technologically weakly integrated applications from 50 different providers is certainly a challenge but, foremost, it is expensive and slow. You may ask yourself now how can I consolidate such a post-merger landscape? Is this simply an IT challenge? It most certainly isn’t!

The participants got answers to those questions and by this also learned to pose the right questions from the practical experience of a project management expert in the IT transformation and post-merger integration area.

The iimt is looking forward to its next Masterclasses in 2016. Topics and Dates will follow soon on the website.

Leaders Launch 2015

Big Data - The value: How to increase profit in an ethical way?

This year’s Leaders Launch - Talk & Dine Event will take place on the 26th of November 2015 at the Gutenberg Museum in Fribourg. Save the date and become part of a unique happening where interesting discussions take place with amazing people in a great atmosphere.

After our annual Award Ceremony where our graduate students will receive their degrees, the ceremony will be followed by an exciting panel discussion around the topic "Big Data - The value: How to increase profit in an ethical way?".

Speakers:
Mr. Andreas Amsler,
Business Development, Liip AG
Mr. Olivier Heuberger-Götsch,
Legal Counsel & Attorney at Law, Scigility AG
Mr. Guillaume Saouli,
Co-President, Pirate Party
Mr. Victor Schlegel,
Senior Manager Big Data Solutions, Swisscom AG

Moderation:
Mr. Thomas Mauch,
Partner, tinkla GmbH

Programme
Thursday 26th of November 2015
13.30 Welcome Coffee
14.00 Award Ceremony
15.00 Break
15.30 Panel Discussion
16.30 Buffet & Networking
Competence qualification in dealing with cyber risks

National strategy for Switzerland’s protection against cyber risks (NCS)
Sphere of action 4 (Competence building), Measure 7

The protection of information and communication infrastructures from cyber risks is in the national interest. The awareness of society and especially the actors from industry and authorities with respect to cyber risks is a crucial factor in risk management.

Generally, any kind of risks associated with information and communication technologies (ICT) are understood as cyber risk; it does not mean a specific risk but a group of risks that are using different technologies, from the attack profiles and composed of uncontrollable outer-acting circumstances. Therefore, for example, a holistic risk observation is not only considering criminal activity but also natural disasters. Accordingly, a distinction is made between defense and protection methods.

In a first mandate, the target groups have been identified and specified. From the individual segmentation stages, experts and best practices in this field have been identified. In addition, an interview guide for the survey of experts from the different target groups has been developed.

On this basis, experts from the different target groups were interviewed by the Federal Office of Communications (BAKOM), the Federal IT Steering Unit (ISB), economiesuisse and by the international institute of management in technology of the University of Fribourg (iimt).

The survey has been created as non-representative, but can very well reveal trends and generate a deeper understanding of what is actually going on. For the survey, experts from business and administration were mainly interviewed.

This qualitative approach, through the exclusive involvement of highly qualified professionals, has however, with regard to the mentioned shortcomings, a significance which shall not to be underestimated. The tendency has showed that a basic awareness of the current and potential situation of danger exists. However, the awareness of training measures and, more specifically their use, seem to be rather under average.

It should be emphasised that the perceived cyber risks seem to be characterised mainly by the nominations "unauthorised data collection" and "intrusion into a data processing system" from the three target groups - economy, administration and population - both in the target group business as well as in the target group of administration. Furthermore, the answers to "hacking" and "(Distributed) Denial of Service" (DoS / DDoS) in these target groups are noteworthy, although it should be noted that a certain correlation exists between "hacking" and "unauthorised data collection".

![Diagram of cyber risks]
It is no secret—the world as it is today only runs with energy; and it is also no secret that the world is faced with steadily increasing energy demands. The reduction of dependence on fossil fuels is a global goal. To achieve this goal three paths have to be considered: First, the substitution of fossil fuels with renewable energy; secondly, the increase in energy efficiency and the expansion of opportunities for energy storage; and thirdly, to find solutions to the associated socio-economic challenges.

With a focus on CO₂ reduction and the pursuit of renewable energy, the energy systems will decentralise tremendously. Technological developments, such as those in the fields of photovoltaic, sensors, and energy storage, allow an extensive local generation of energy as well as an intelligent and sustainable usage of energy. Efficiency and decentralisation with a tendency to energy self-sufficiency have been the effects. This leads to concepts, such as Crowd Energy, and raises the questions of what are the cutting-edge services and applications as well as what are the economic, political, and social-innovative structures needed to support the energy consumer as he becomes an energy prosumer. Future energy systems are not just a topic of innovative technologies, but also of innovations in economic, political, and sociological sectors.

For presenting the latest research achievement on these issues, the Journal of Electronic Science and Technology launched a Special Section on Energy Efficient Technologies—Crowd Energy Applications. Eight papers were accepted by a very cautious review of highly qualified submissions. The authors are from Australia, Germany, India, Lithuania, Poland, Switzerland, and the UK, thus giving an international view on the topic.

The section starts with the paper **Crowd Energy Management: The New Paradigm for the Electricity Market.** It is argued that the centralised approach of electricity networks progressively has been undergoing a shift towards a decentralised structure and the existing supply chain and related activities are transforming into a value network (VN). Collaboration with and within crowds particularly demands a different mindset and management of sharing values, information, benefit, and risks. The contribution proposes a holistic framework of electricity VN management for crowd energy.

The second paper, **Multi-perspective Analysis of Microscale Trigeneration Systems and Their Role in the Crowd Energy Concept,** depicts the transformation of the current energy system into a decentralised intelligent one. Innovative technologies and ideas are the fundamentals for a successful transformation, e.g. the combined cooling, heating and power systems (CCHP). The obstacles of a CCHP deployment are discussed and a theoretical analysis of the energy-economic dimension is given, thus, itemising its potential regarding the crowd energy concept in terms of the technical flexibility of a power system.
The third paper, *Rethinking Enterprise Architecture for Sustainable Energy System Development*, reflects the thoughts of an international research team from Lithuania and Australia in terms of a strategic agile enterprise architecture driven approach that could effectively guide the sustainable energy system development. Smart grid technologies (SGT) have been an important step toward greener and more efficient energy usages. They are an important part to achieve the energy goals all over the world. However, the integration of innovative technologies and concepts requires congruent and coherent actions of all stakeholders.

Thus, the fourth paper, *Analysis of the Stakeholder Engagement in the Deployment of Renewables and Smart Grid Technologies*, proposes and discusses a framework for the interplay of the stakeholders and introduces as a result a communication strategy for an active promotion of SGTs.

The fifth paper, *Sentiment Analysis as a Source of Gaining Competitive Advantage on the Electricity Market*, focuses on the energy market aspect. The authors introduce a solution that through the use of quasi real-time and automated sentiment analysis on the energy suppliers and the relevant aspects of their offers may enable energy companies to quickly adapt to changing circumstances, prevent potential customer churn, and harness new business opportunities.

The sixth paper discusses *The Influence of Taxation on Supply and Demand in Tomorrow’s Crowd Energy Paradigm*. The need to revise the policymaker’s long-standing transactional view of taxation is highlighted and a number of original fiscal concepts for policymakers are proposed.

Paper seven, *Enhancement of Distributed Generation by using Custom Power Device*, presents the monitoring, modelling, control, and analysis of two levels, the three phase wind energy based distributed generation system, where the electric grid interfacing the custom power device, is controlled to perform the smart exchanging of electric power.

Finally, paper eight, *A Methodology to Measure the Environmental Impact of ICT Operating Systems across Different Device Platforms*, focuses on ICT operating systems and energy-efficiency. A new methodology is introduced to measure and describe an operating system’s impact on device energy consumption and related environmental impact, regardless of its device type or platform.

The contributions have shown that technology is necessary, but technology for the allocation of regenerative power and energy efficiency is not a progressive notion in the future of energy systems, but the associated change in the roles of all stakeholders and their understanding of the convergence of energy sources are indeed progressive shifts. This relates not only to the correlation and interaction of the participants, but also to the way energy is used.

Online availability!
enersis wants to make a substantial contribution to sparking the Energy Transformation. We are a young and growing IT-consulting and software company specialising in energy management, headquartered in Switzerland with a German subsidiary in the Berlin metropolitan area. Our clients are utilities, local authorities, municipalities, co-operatives and energy-intensive companies, who we support by providing innovative strategic solutions as well as implementation guidance to the Energy Transformation.

Using the most modern Big Data, Business Intelligence, and visualisation technologies, we have developed the software platform „grids“ which provides various application modules for the smart-grid and sustainability management and is continuously extended. The grids smartCo-op module is based on the grids EEGmap. It combines publicly available data with data provided by the renewable energy installations of a co-operative or municipality as well as external data for forecasts and simulations as a citizen information and decision support tool.

The energy transformation will largely depend on decentralised renewable energy production, and thus the involvement of rural municipalities and their citizens. Our grids smartCo-op solution helps co-operatives and municipalities to reach their climate goals, by integrating available data from existing tools into its Renewable Energy map, which makes it easy to inform, manage and control renewables in a cost-competitive way. The grids smartCo-op is offering co-operatives and rural municipalities two solutions at once: the highest transparency possible to all parties involved, in order to avoid protests against new projects, i.e. wind mills, as well as showcasing the economic benefits of renewables to foster additional participation. It also allows monitoring and benchmarking of all installations directly in the tool without further exports, data consolidation or similar.

grids smartCo-op is the first Big Data for Energy solution that integrates various applications into one tool including a highly ergonomic user interface and visualisation, making it easy for non-energy experts to understand this complex topic and navigate smoothly to all relevant information. Municipality and co-op staff can use the tool for decision support on future efficiency measures and installation planning, as well as simulation of production and revenues. The new grids module is highly flexible and cost-competitive therefore a good solution also for smaller municipalities. In Switzerland, grids smartCo-op could be an ideal platform to reach or improve the Energiestadt label grading. We are happy to see that 327 Swiss cities and municipalities have taken the first step already without grids but see lots of potential to support this programme with our solutions.
20 years iimt – The wishtree

Some of your wishes to the iimt for the next 20 years

- Viele spannende Projekte & Innovationen

- Weiterhin jeden Tag ein Lächeln

- Keep this fantastic "Stimmung" to be together

- Influence the world in a positive way by transporting values through your Alumnis

- Keep the unique spirit of a joyful & informative further education

- Tout de bon pour la suite

- Beaucoup de plaisir

- Many active students with critical mindset

- ë² - ideas & innovation

- m - motivated Staff & satisfied students

- t - tremendous success

A dozen of 20th anniversary