



ibbf INSTITUT FÜR
BETRIEBLICHE
BILDUNGSFORSCHUNG

The Big Transformation

chances, challenges and the role
of further education in Germany

Dr. Erik Malchow
www.ibbf.berlin

1. IBBF: Topics, Projects and Team

▪ SME Competence Development

- INWENT (SenWTF)
- Quali4Pro (BMBF)
- SME Apprenticeship Engagement
- AtTraK (EU ERASMUS+)

▪ Transitions in Energy, Mobility, Heating

- Weiterbildungssystem Energietechnik
- E-mobiles Brandenburg (MWE)
- Lernlabor Flottenelektrifizierung
- LERNWELT ELEKTROMOBILITÄT

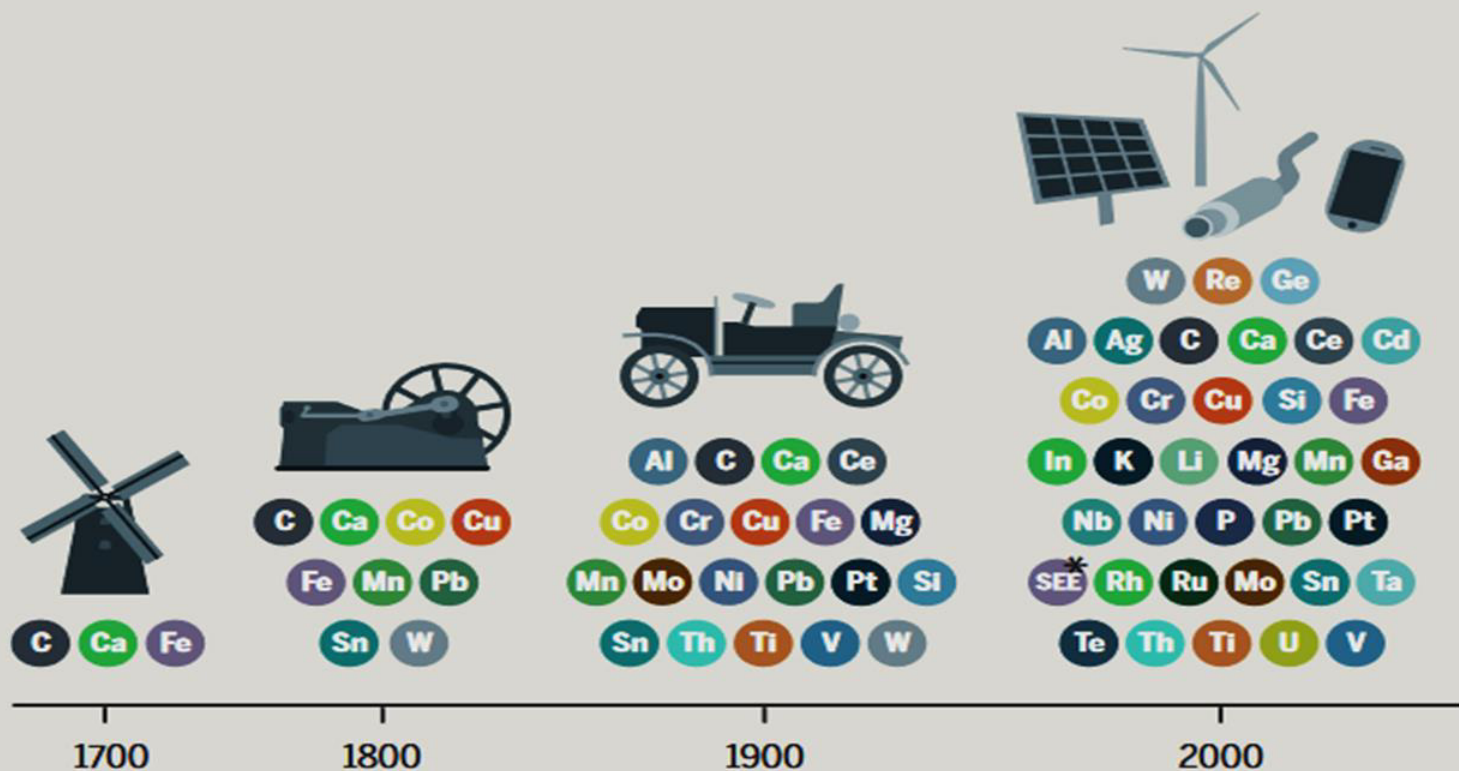
▪ Work 4.0

- CoLearnET (BMBF)
- DigiKomp (SenIAS)
- DigiSys (MASGF)
- QUANT4.0 (BMAS)



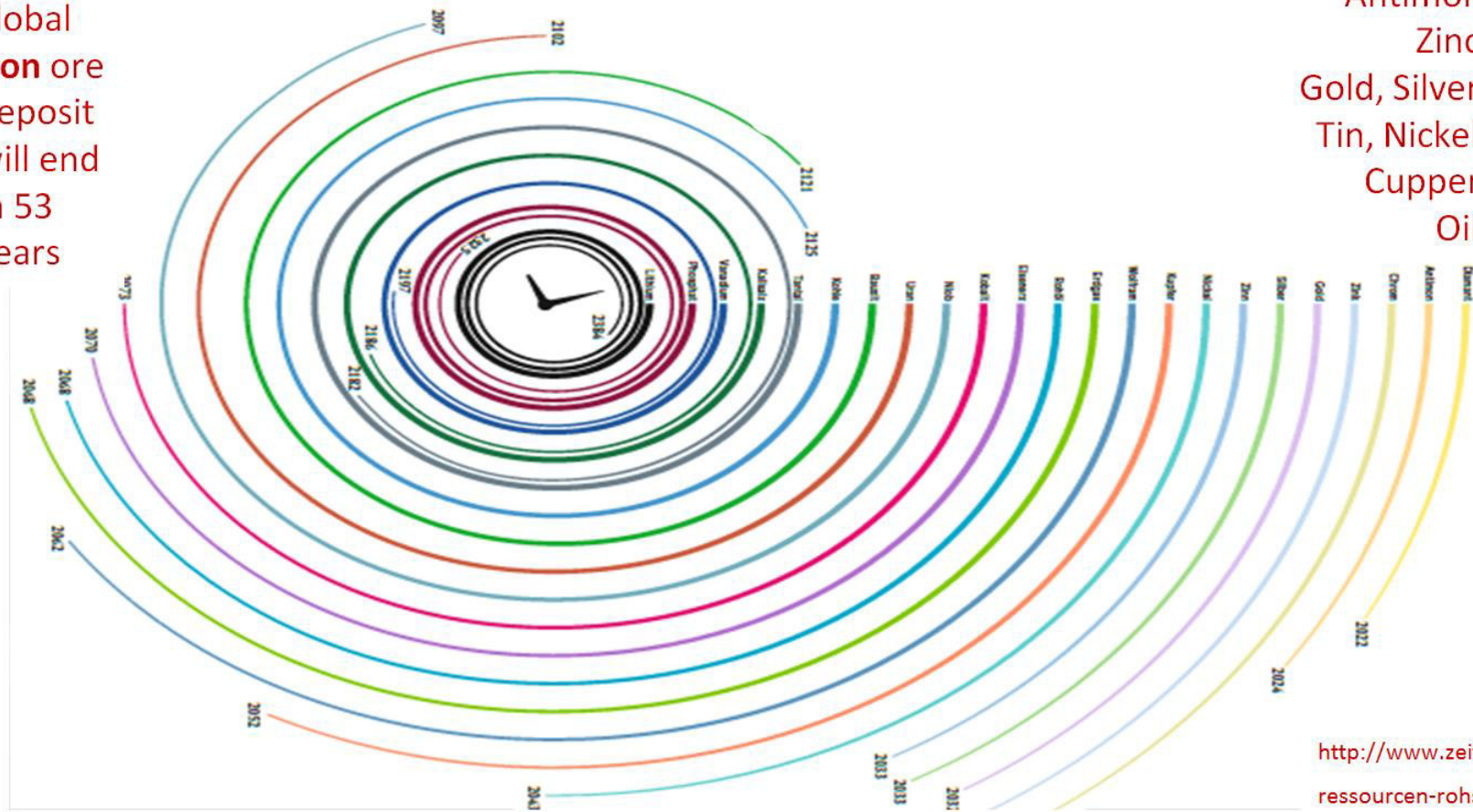
Why?

Technology developments and the variety of used material



The global raw material ranges

The global **iron** ore deposit will end in 53 years



Expected to last:

Diamond = 4 y

Antimon = 6 y

Zinc = 14 y

Gold, Silver = 15 y

Tin, Nickel = 25 y

Copper = 35 y

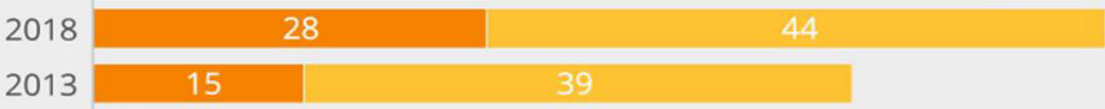
Oil = 50 y

Impairment of business due to weak infrastructure in Germany

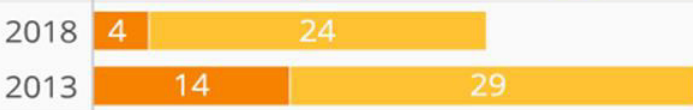
Road traffic



Communication infrastructure



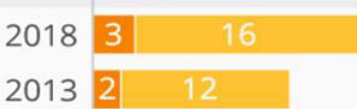
Power supply



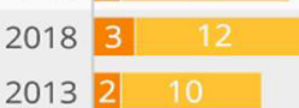
rail transport



Air traffic



Shipping



Children born in Germany per anno

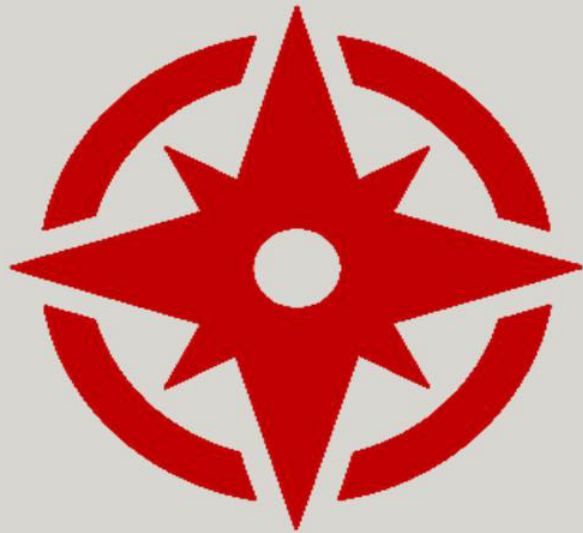
1964: 1.300.000

2012: 600.000

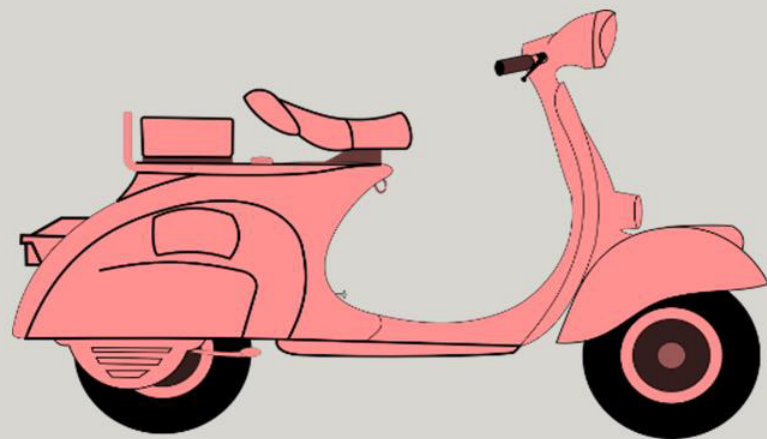
2018: 800.000

What?



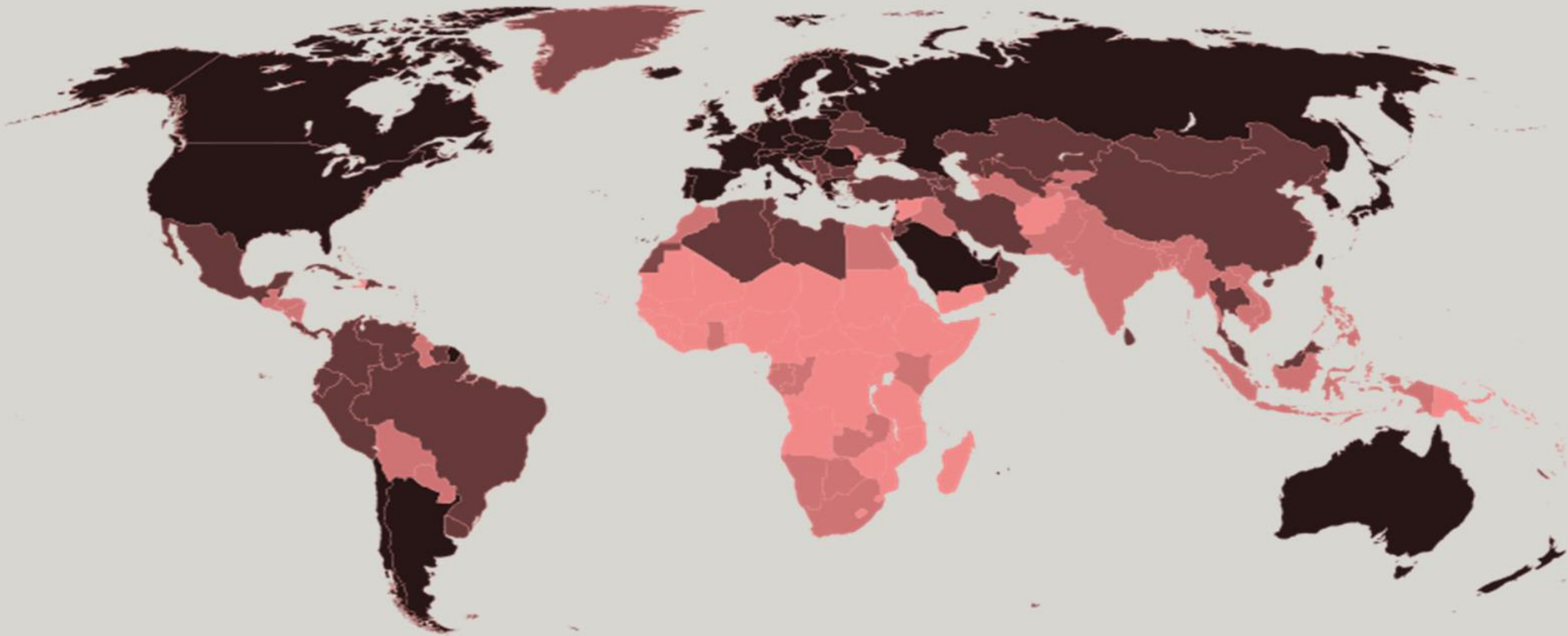


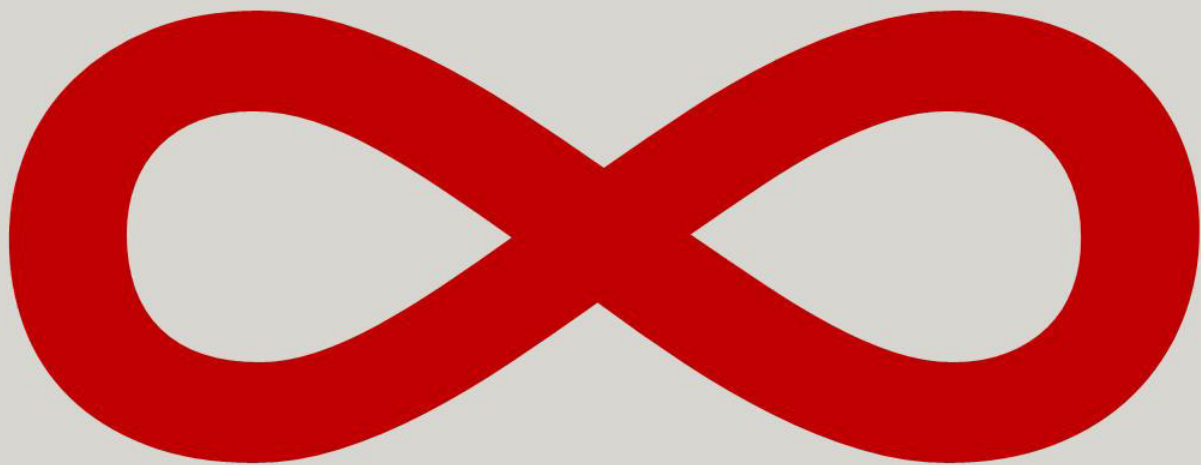




How?

UN Human Development Report 2016



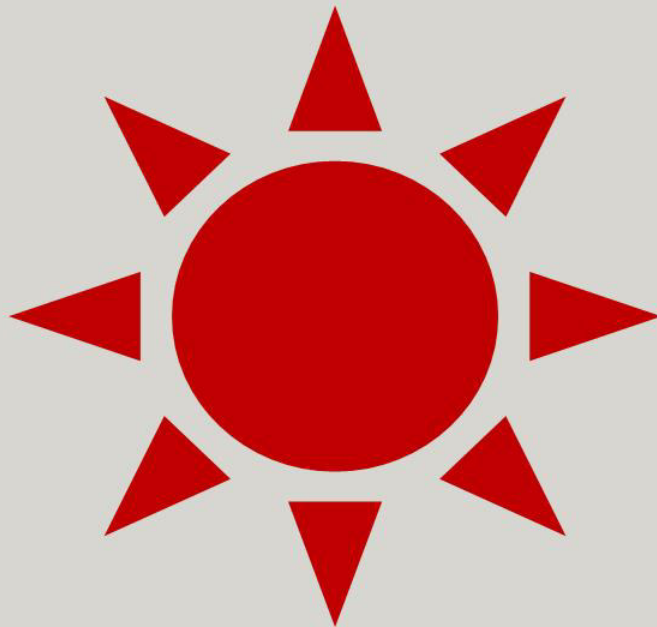




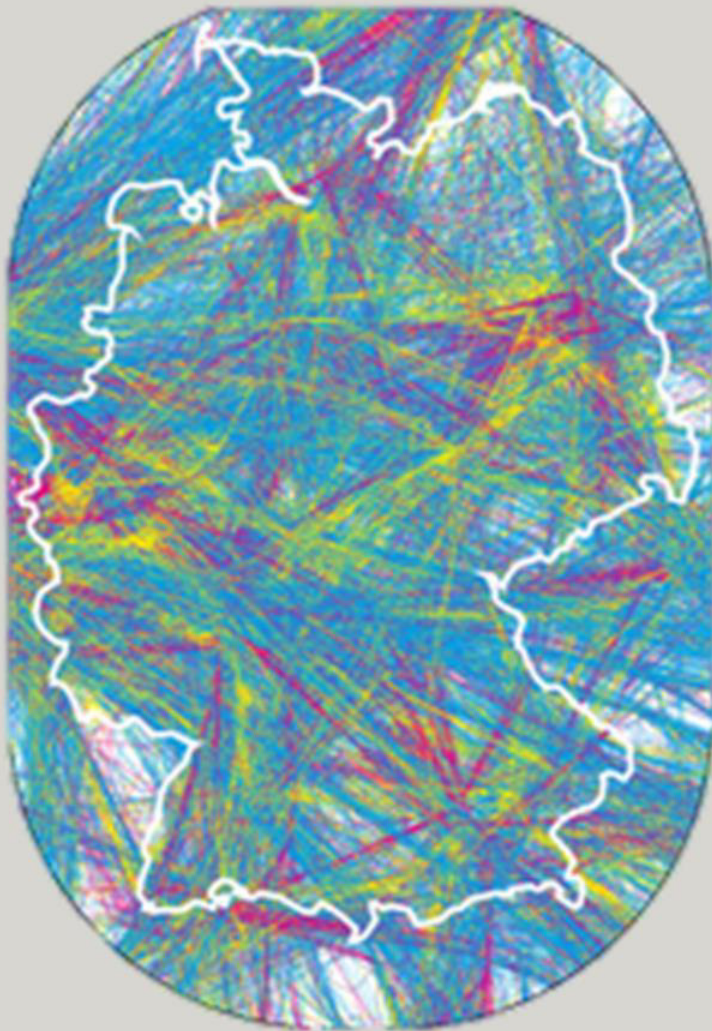
Electric Mobility

Quelle: <http://cti.euroforum.de/nextdrive/wp-content/uploads/2017/06/Elektromobilit%C3%A4t.jpg>

Which?

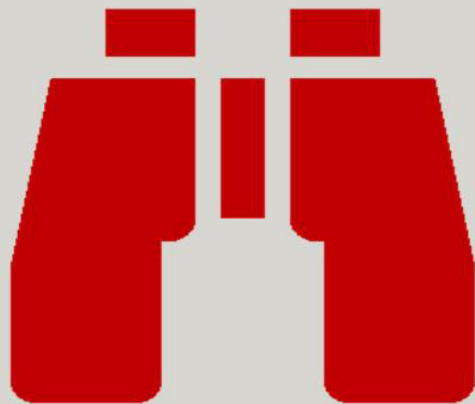


Daily flight movements over Germany



— Starts
— Landungen
— Überflüge







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Description of the Keynote Dr. Erik Malchow IBBF – Institut für Betriebliche Bildungsforschung

„The Big Transformation- chances, challenges and the role of further education in Germany“

1. Thank you for inviting me to the conference „New opportunities for adult furthering qualification in the frame of environmental, nature and climate protection“ and for giving me the chance to speak about major chances, challenges and the role of further education and training in Germany now and the future. The big transformation. My name is Erik Malchow I represent IBBF which is a small and relatively young VET research institute here in Berlin. I am happy to bring some important issues together: The role of communication, cooperation and education for sustainable development and a thought for a new kind of our economic system. I will illustrate this with some R&D projects, their research results, practical outcomes and suggestions.
2. Our team consists of twelve colleagues. Since 2012 we are working together with SME`s in the cluster of energy technologies and traffic, mobility and logistics in Berlin and the county Brandenburg on main transition topics in energy, mobility and thermal energy sector. Moreover we are getting together with enterprises to address the challenges of the digital production processes and the recruitment of young people as apprentices or future staff.
3. You could ask: Why these topics? Why should an educational research institute bring these topics together? And why should German companies cooperate in R&D and struggle with new ideas as long as they are successful? Apprenticeship, transparency, gender balance, job offers for women, energy transition, e-mobility and so on and so forth. These topics belong to each other and to the future of enterprises as well as communities, regions and societies. Let`s have a look at some of the facts.
4. In the last 300 years mankind did a lot of research, developed new technologies to end hunger and wars, to overcome poverty and illness. The good news - this is very close to happen. But we used trial and error methods and invested more or less everything.
5. The result is a massive rise of the global material consumption. Today this consumption is as high as 10 tons per person per year – twice the consumption than 50 years earlier, rising exponentially. We can`t follow this track any longer. Moreover, we bring materials to places where they damage other resources we need: air, water, fertile soil. And of course we are limiting the basis of economy for future generations. This images is an outcome of all relevant existing statistic data (from extractors, governments, etc.) known today. No further comments.
6. Beside a rising amount of material, we need strong infrastructure systems for the present way of producing goods and services. But because of a lack of responsible decisions in the past, our infrastructure is not strong enough. Massive investments are needed here.

7. Moreover, Germany is confronted with a negative trend in absolute numbers of given birth and the birthrate too. This negative trend ended by around the year 2012, where about 600 thousand babies were born. Now numbers are rising again to around 800.000 in 2018. In summary, the demographic change means that 1.3 Mio employees will be retired in each of the next years, without having the same amount of youngsters to substitute them. We observe the same trends in the most of the European countries, influencing especially SME's. This trend is different in cities and regions where young people of the generations Y and Z find the conditions they expect.
8. So what is a successful German company expecting of youngsters or their production? Do they even have any expectations concerning their material food print? They will need to in order **to stay alive**. Let's start with chances and challenges of SME apprenticeship engagement. This will guide us to chances and challenges of SME's sustainable development and later onto the role and solutions of further education. What can SMEs do to become competent employers and do the complex and responsible work of the future? Differently put: What is additionally needed to be done, knowing that 3000 successors are wanted just in Berlin. What are the details?
9. In 2017 we, the IBBF, asked 5000 pupils in the county Brandenburg at the age of 15-16 about their expectations on VET, future jobs and enterprises. About half (2314) replied: Most important for young people is that they get exactly the job they dreamed of, which means the most of them have no alternative plan. If they could not get the one and only occupation offer, they are lost. The majority of them are not aware, that different apprenticeships offer a training of a similar skill set.
10. Regarding their future plans, secondly important is that young people want to know their perspectives within the enterprise in detail, before they sign a VET contract. Even before they'll get in personal contact, they will visit the company's website and look for information on:
 - VET and study opportunities
 - different job offers, regarding to their qualification
 - work conditions with fair payment and a respectful company culture
 - excellent living conditions for young families with children in the region (kindergarten, school ...)
 - through R&D projects with/in companies interesting topics – something where they can become the future experts
11. A good salary is number three on the list of priorities for or against an apprenticeship contract with an enterprise. And that may be the reason that not a single young person in those 2314 wants to become a roofer, a hairdresser or a toolmaker. What does this mean for society? We do see an upcoming need of change for the historically based payment differences. The companies with new payment models like for instance same payment for all staff members, are considered as particularly modern and interesting for young people.

12. A big challenge is also to overcome the distance between apprentice home and the VET company and the VET provider. It must not be too long; companies must be reachable for youngsters without a driving license or a car. In the last years the German Railway closed up many of the smaller railway lines through the counties like Brandenburg, yet new mobility services help to overcome longer distances. This is a chance and an extra joint for enterprises, when they offer e-bikes etc. for their staff.
13. However, one of the main challenges for SME's in Germany is today: How do we get young people on board? Our survey showed that young people want to work for enterprises that are acting responsible. For 75% of these 2314 youngsters, the topic is as relevant as their income. Other research studies present similar results. That brings us to the connection between successful hiring activities and sustainable development.
14. To show the big picture of this connection we need to take a step back. This UN world map indicates the [Human Development Index](#) by country. HDI is a composite statistic of life expectancy, education, and income per capita. Shown in dark are countries with the highest abilities to influence the ongoing developments. Because of the common economic system, the same countries have the highest ecological effects. What is also very interesting is the connection between educational and economic success.
15. Still the importance of enterprise-based, constant learning is absolutely underestimated. Which is really needed and an immense challenge because of shorter innovation cycles, rising numbers of new technologies, different materials, constructions, compounds and so on and so forth. We have a very strictly regulated 10 year-long compulsory public school system and three years of a dual VET or a bachelor in a university. And afterwards 45 – 50 years of further education without any kind of an existing framework. That is the reason why our team at IBBF developed such a kind of framework in the last few years. At the moment we work together with SME's and VET providers on special training offers for VET teachers and trainers. This is the field where we see the most chances to raise the competences in SME's.
16. Video: <https://www.youtube.com/watch?v=yhMpoGjFDYY> – Comments in English: Innovative vocational training for companies in the energy sector. This is Mr. Deckert. He is leading a company in Berlin. Mr. Deckert wants to implement an energy management system and optimize the energy efficiency of his company. Mr. Deckert tries to get any overview of this complex topic, while dealing with the daily business. He has little time and his company has full order books. Mr. Deckert heard from a colleague about the energy tec continuing training scheme of the IBBF. The system offers a wide range of funded vocational training in the area of energy tec. The trainings were developed for companies like the one of Mr. Deckert that were confronted with similar challenges. Mr. Schäfer from the IBBF is meeting with Mr. Deckert. Together they are looking at which competences are needed for the implementation of an energy management system, which staff and areas will be involved and how the training offer can be optimized for the company. The training will be led by an authorized trainer for the energy tec continuing training scheme. The knowledge will be conveyed in courses, on- and offline. The new knowledge will be exercised in a new learning project and hence directly influences the ongoing processes. This reduces downtime and guarantees a high level of fitting accuracy of the learning contents for Mr. Dekert's company.

Perfect. Mr. Deckert built up the needed know-how to implement an energy management system. His staff was qualified individually and the company profited from public subsidies. Does your staff need further qualification that needs to be implemented promptly? We are offering a fitting solution or we will develop a training solution together. For more information, please visit our website or contact our partners directly. The IBBF, the Lernfabrik Berlin or the HTW University of Applied Sciences in Berlin.

17. Furthermore, new concepts and solutions of further vocational education and training are needed in order to meet the goals of the mobility transformation. The aim is to develop innovative training opportunities along the education chain and to introduce these into daily (further) education work. Here in Berlin we are developing cooperation among all educational stakeholders. Because scientific knowledge and its technological implementation in ever-expanding companies increase, training requirements for workers will also increase. New supportive solutions, methods and formats are needed.
18. Which ways have been chosen by the German economy especially SME`s to meet the challenges of successful hiring activities and sustainable development within the economy?
19. Engaged and successful SME`S start at school with building long-term relations with pupils and their parents. They try to reach them at school before pupils leave. They offer lesson like „Digital world“, „Metal occupation “ and don´t try to be too cool – using a clear style to inform and offer a direct contact person. The SMEs show perspectives online with an rough description and videos, where apprentices tell their stories. And of course they engage sustainably with the whole team and address potential apprentices and job starters.
20. The picture illustrates flight movements on June 29th 2018 over Germany. **11.015** flights were counted on a single day – we know about numerous negative effects. But we also have to recognize the very positive effects of transport for economy and of travelling for building cultural awareness of youngsters. Our common task is to organize mobility in a suitable way. And we have to invite the younger generation to these processes, because we need their engagement, power and future professionalism to work on fitting solutions. The good news is that a rising number of young people is willing to do work for SME`s on alternatives, even for a smaller amount of salary.
21. For this kind of projects which aim to create sustainable development it is easier to hire women. And this is very important for enterprises, which are located far away from bigger cities. It should be clear, that if you want to attract young people long term, you need to have a balance of men and women. Regardless in what kind of branch you are working, the new digital technologies make many jobs easier to handle – also for women.
22. Especially smaller enterprises have to present a range of various possibilities – different occupations, dual VET together with a Bachelor degree, or even a VET together with a Bachelor and a crafts Master degree. Some employers additionally offer apartments, IT devices, even cars. And they have to organize their own learning processes and address further education possibilities regarding their sustainable development. There are a lot of R&D funding programs addressing the economy, even on an EU level. But SME`s are mostly

too small to deal with all these aspects and demands. So our support is needed to integrate them into R&D regarding sustainable development.

23. Examples of good practice show that production can be fair, regional based and sustainable. The highest present standard is „Cradle to Cradle“. It stands for innovation, quality as well as good design and describes the safe and potentially infinite use of materials in cycles. Over 140 enterprises are producing on this basis, smaller and even bigger ones like Trigema, Desso, Stabilo, Memo and C&A. This responsible product design serves also as good employer branding, which supports the identification of staff with the company. Furthermore, the Next Economy Award (NEA) is the national award for startups that focus on sustainability. It is open to young companies that use innovative ideas and business models to provide answers to the social, economic and environmental issues of our time.
24. Last but not least: The chances for cooperation are now better than ever before. And interregional cooperation is so very important – so please contact me and us for common future project ideas. Thank you very much for the chance to speak here and for your attention.