Keynote speech at GAIA-X Summit – determining the future value of GAIA-X

What will the future value of GAIA-X be? The value of a future GAIA-X infrastructure can be assessed using a market that aligns all stakeholder utilities. By choosing the right-to-use approach, long-term consistency between utilities from all stakeholders can be ensured – i.e. stakeholders with a high overlap of common goals come together. Right-to-use can be translated as a token design for the digital realm. GAIA-X tokens secure funds for building the infrastructure and continuously measuring future value growth. That also means digital right-to-use is a game changer for transforming GAIA-X into a new kind of powerful digital cooperative. This is a brief summary of what Nik Scharmann and Christian Heise, the Project Directors of "Economy of Things" at Bosch Research, presented at the virtual GAIA-X Summit on November 18 and 19.
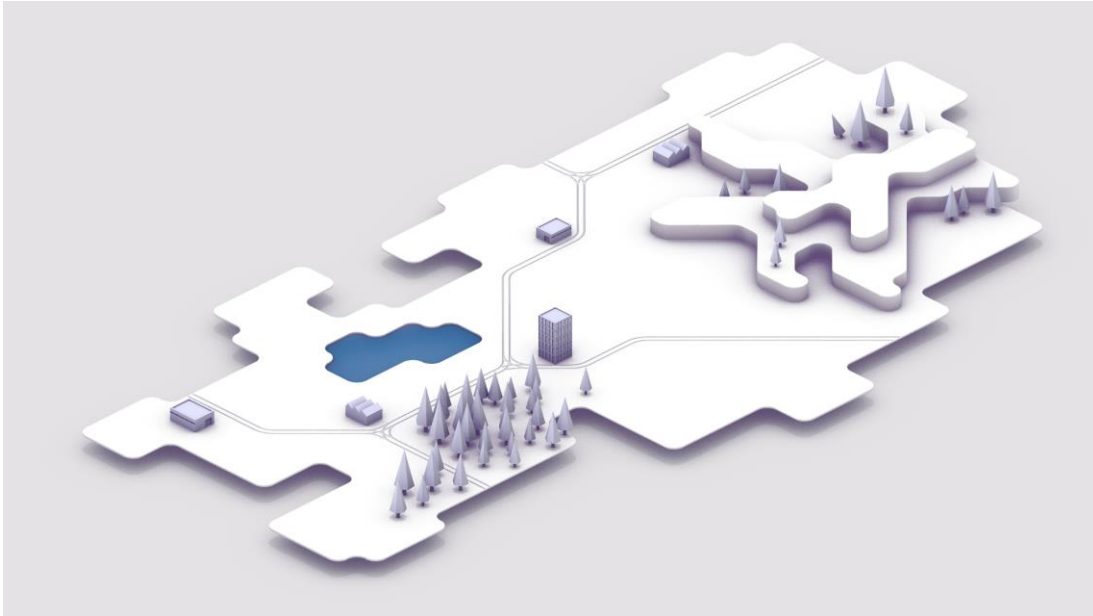
Incentive systems and funding models are important requirements for building and operating lively data spaces such as GAIA-X. Basically, the founding members – including Bosch – want to engage the community to contribute to GAIA-X and ensure sufficient funds can be collected and spent efficiently. Key to fulfilling both requirements is firstly determining the future value of GAIA-X, and secondly making that value actionable and measurable. But what is the future value of a GAIA-X infrastructure?

The value of GAIA-X can only be determined by using a market that aligns the utilities (goals, costs and strategies) of all important stakeholders – firstly, these are the investors who invest money or resources into the system. In an initiative like GAIA-X, investors can be both private and public. Secondly, there are the suppliers that later provide services within the GAIA-X ecosystems. Finally, and most importantly, we have the users of GAIA-X.

The approach of choice – ask the market to evaluate the right-to-use of a GAIA-X ecosystem in a cooperative setting. Only this approach ensures long-term consistency between the utilities of all stakeholders and enables the success of a future GAIA-X to be measured. In digital economics, right-to-use means a token design. The team behind the strategic advance engineering project "Economy of Things" at Bosch Research is therefore convinced that the corresponding digital ecosystems can best be built on the basis of decentralized approaches and by applying good incentive design e.g. with tokenomics. In fact, this is the evolution of the cooperative model for the digital age.

Right-to-use explained using an analogy from the evolving logistics network

This story illustrates the idea – imagine a small region with a few businesses in it. They produce goods and trade with each other. They have a basic infrastructure that was built before they started operating and they have been using it happily for some time. Now, these businesses depend on a transportation infrastructure to get their goods from the factory to their customers. Unfortunately, the existing road network no longer satisfies their needs. They do not offer safety for their transported goods, and many other companies do not trust the existing operators. All in all, however, everyone benefits from having the roads and wants to improve them for more and better means of transportation.

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The weak point of this set-up is that the road network is operated by logistics providers that on the one hand provide high-quality services, but on the other control which goods can be transported and how. They define the terms and conditions for using the roads.

This is similar to the situation GAIA-X addresses. Cloud services and data markets are dominated by a few players who do not necessarily have ideals that align with the European principles of subsidiarity, supranationality and solidarity.

Back to the analogy. A number of representatives from the businesses, along with representatives from the business users demanding better conditions for their goods transportation, get together to agree on a better plan. They come up with the idea of a railroad infrastructure. This infrastructure will partly be built on top of the road infrastructure and partly replace it. To gain more control, the representatives also decided to take matters in their own hands, and collectively own and operate the railroad infrastructure.
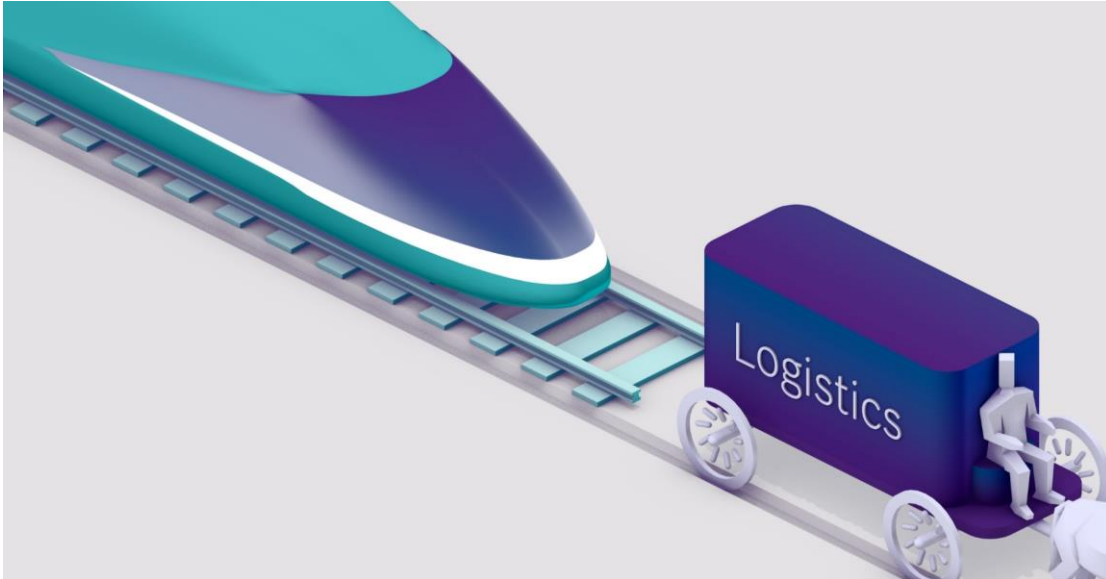
Collectively building the railroad involves splitting the work and specializing in certain aspects of the railroad infrastructure. For example, tunnel drilling and rail installation in open spaces require different skills, equipment, planning and funding. However, both parties need to agree on standards for the basic components, e.g. the size of the tracks for a railroad. **For GAIA-X, this means having a good understanding of the requirements of future users of the GAIA-X infrastructure. The founding members have already invested a great amount of work in the basic technology and possible shared standards.**
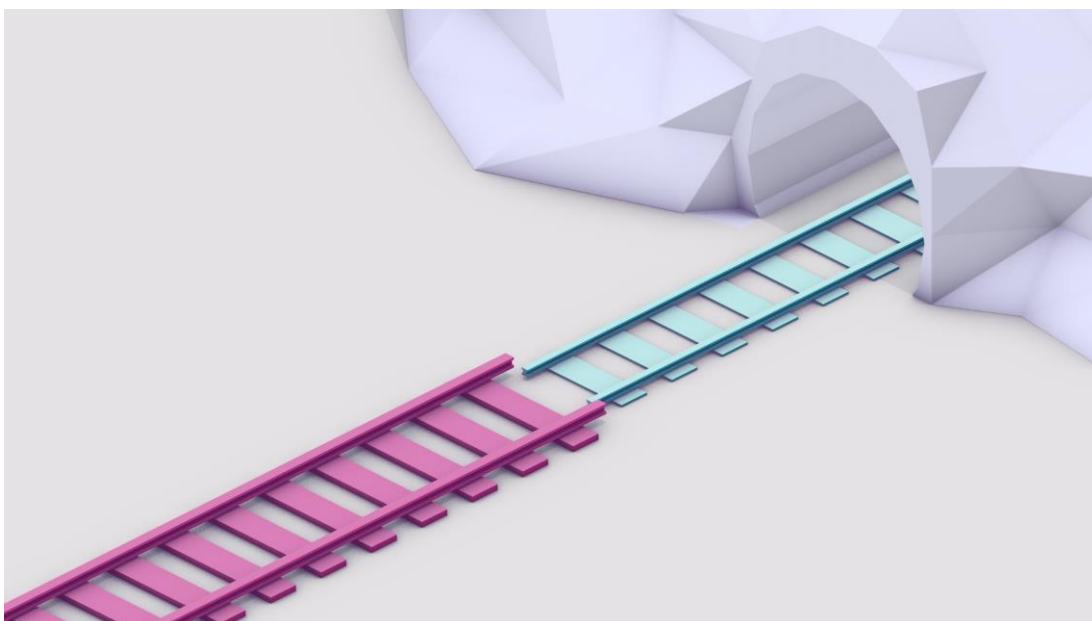
Now let's have a look at the economic side of building a new, competitive infrastructure. There are two major challenges to building the railroad infrastructure in the analogy:

1. The businesses are experts in their own fields, but not all of them are railroad experts. They see the benefits of a better system, but cannot finance it.
2. The second problem is that nobody can really put a price tag on the benefits of a better infrastructure, since it will take some time to actually build it and move businesses onto it.

In terms of reducing the financial risk, the companies therefore contact their local city council. Since the city council cannot answer those questions either, it has to decide how to create incentives for the businesses to actually build the new railroad system. A traditional approach would be to reduce the risk by taking over a part of the cost of business (i.e. publicly funded projects). The natural incentive here is to build the infrastructure by spending the money. You could then get unnecessary components, or an inefficient solution, e.g. a circumvention instead of a direct bridge connection, simply because the budget needs to be spent and more efficient mechanisms are not financially attractive at the time of construction. The city council has no way to track whether the money is well spent, only that it has been spent.
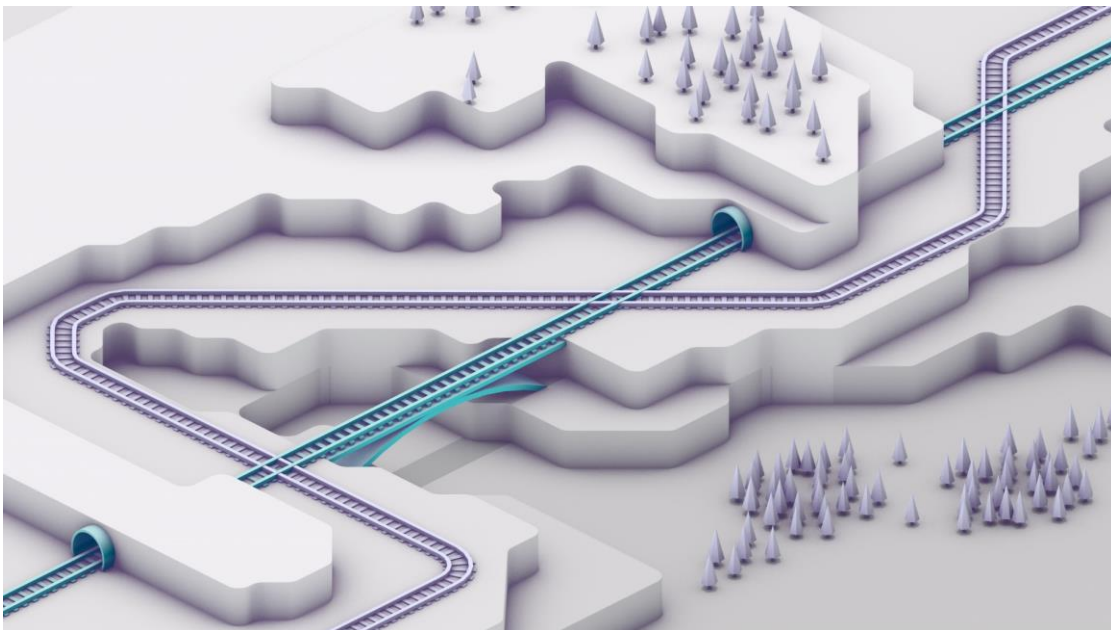
The city council comes up with a nifty trick to have businesses assess the value of the future railroad infrastructure – it provides tickets for using the future railroad system service in advance. The terms of the ticket are clearly defined, e.g. each ticket permits 1kg of cargo to be transported for 10km on the future railroad system. Since the railroad system does not yet exist, the tickets are relatively cheap initially. Now each of the businesses can assess whether they can transport more goods, and more safely, using a future railroad system, and buy the tickets.

In GAIA-X, this means you can address the different needs of different stakeholders and each and everyone's valuation will be reflected in the amount of tickets they get for themselves.

Now the city council has funds to spend on building the railroad infrastructure. Since all of the initial investors now have a lot of tickets saved, they will do their best to build the most efficient infrastructure. The people who bought the tickets will closely observe and steer the council decisions on how to spend the money effectively and efficiently. As a result, the investors (private or public) can control, assess and invest in the future infrastructure.


Two effects occur:
1. The original railroad idea will be built in the most efficient and effective way
2. New businesses, realizing the benefit of the railroad system, will build their operations adjacent to or on top of the railroad system, e.g. new train stations, new interactions, just new things that were not originally imagined.

That has to be the objective of GAIA-X, too – building a digital infrastructure based on European values and becoming a foundation for future innovations.

Once the trains are running, there will be a demand for tickets. Now the holders of the early tickets can decide whether to use them for their own needs or sell them to others. The market for tickets at that time will determine the price. This provides an incentive for early contributors – they can redeem their right-to-use in the system and benefit from their early discounts, or they can sell it at market price and make a profit on the sale.
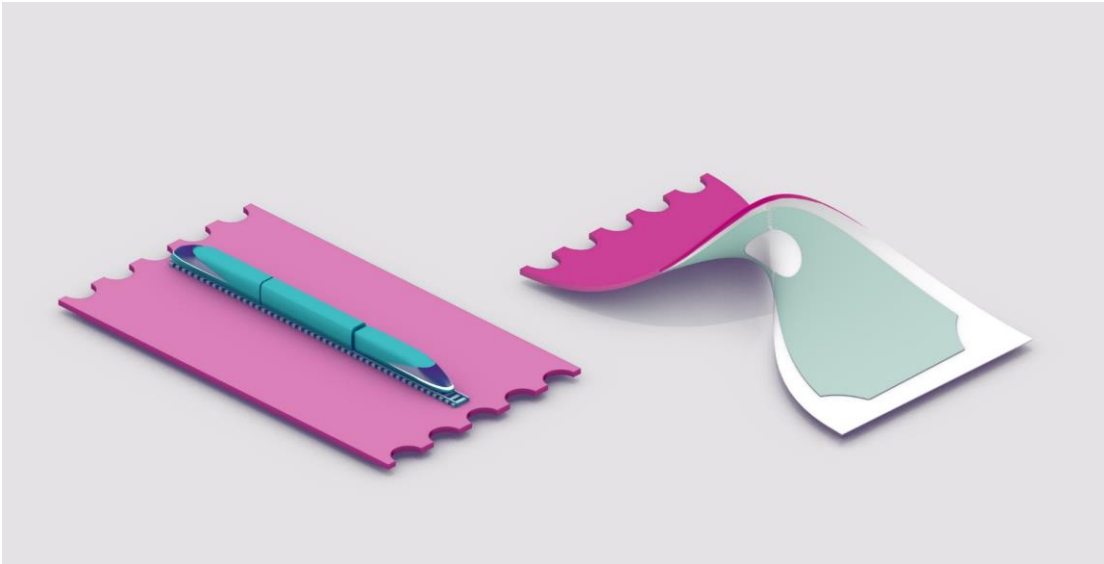
Returning the whole story to GAIA-X

The story shows how the most efficient infrastructure has been created. To sum up the analogy – a ticket is a right-to-use for an infrastructure, e.g. the GAIA-X infrastructure. Transferring the idea of a ticket to decentralized technology gives you to the digital equivalent, a potential GAIA-X token. More specifically, a utility token. All owners of such tokens have implicitly agreed to the underlying European values and goals of GAIA-X. They agree on their voting rights, they agree to comply to policies and rules, and they invest in building GAIA-X.
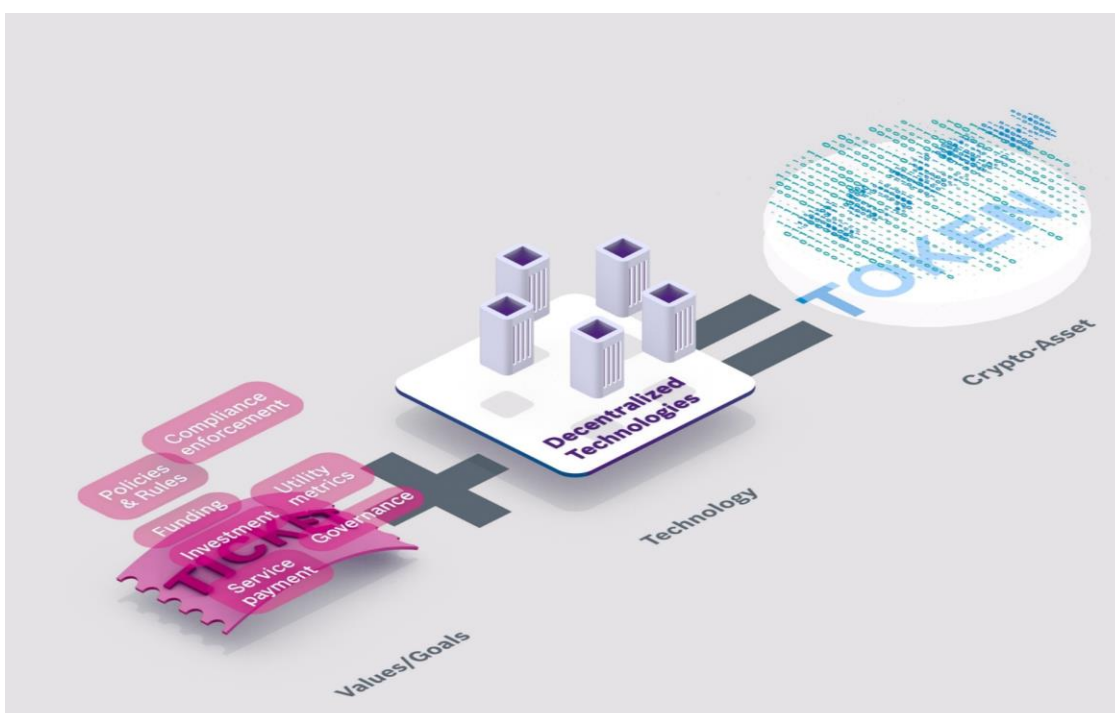
GAIA-X tokens secure funds to build the infrastructure and to continuously measure future value growth. This creates accountability – especially to the investors.

Characteristics of a potential GAIA-X token (right-to-use)

▶ Ensures long-term incentive alignment for all public and private stakeholders
▶ Funds for building the GAIA-X infrastructure are secured
▶ Early investors take a risk in financing the infrastructure and get a reward when it is actually used
▶ Tokens are used to pay for the services the GAIA-X ecosystem provides once it is in operation

The evolution of the cooperative model in the digital age

Working together for the common-good is deeply engrained in human nature and has been the basis for forming communities for a long time. The cooperative idea has been reinvented many times throughout human history, continuously being updated to meet current challenges, and when new legal and technological opportunities arise. The team behind the strategic advance engineering project "Economy of Things" at Bosch Research believes that digital tokens are just such an opportunity. This is why the team is inviting the GAIA-X community to build the cornerstones of a new kind of impactful European digital cooperative.
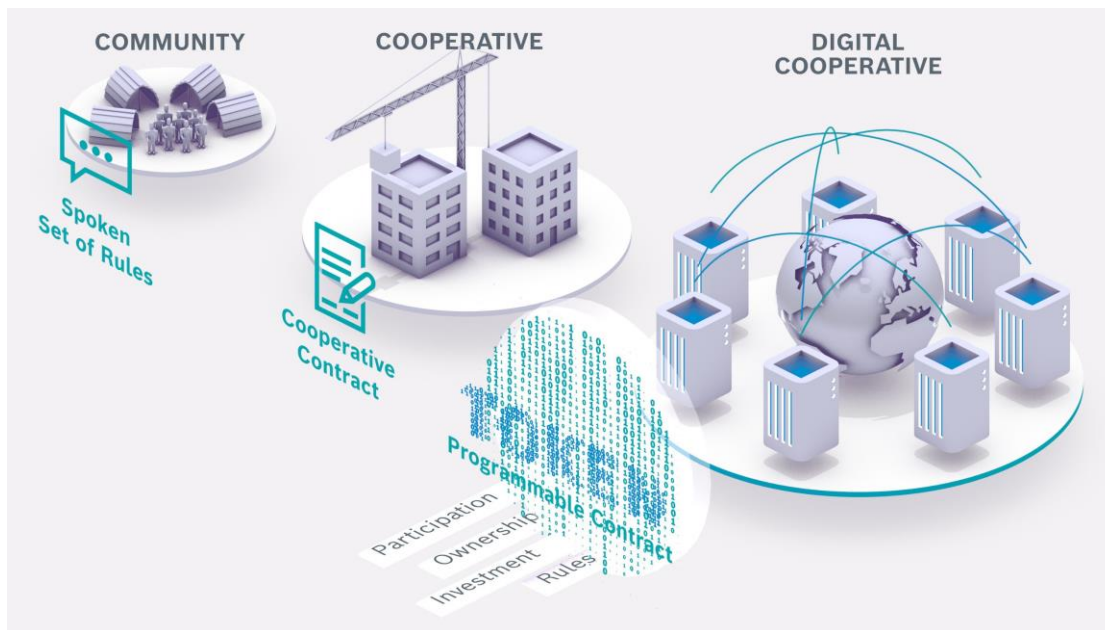
Renningen, November/December 2020