



University
of Basel

Center for
Innovative Finance



Final Event of the Blockchain Challenge.

Tuesday | 11 May | 17:00 – 20:00

Public event streamed via Zoom Webinar.



Foreword by the Jury

The University of Basel has been offering Blockchain courses since 2017. In various courses, students learn the theoretical foundations of this promising technology and get a chance to see beyond the hype. From cryptographic algorithms to mechanism design and various protocols, our students tackle a broad range of relevant topics. These foundations are essential to understand the technology and get an understanding of how it can be applied.

In addition to the theoretical classes, we host a very special format: The Blockchain Challenge. It essentially serves as a capstone project, where students get a chance to apply their knowledge and work on real-world cases provided by project partners from various industries. The students get a case with a specific question and employ Blockchain technology to come up with creative solutions.

This novel format has been highly successful, and a large variety of interesting cases have been developed in the past few years. Tokenized train tickets, identity solutions for suppliers in the pharma industry, and provably fair submission schemes are just a few of many applications that have been developed in the past – And once again, we have a very promising and highly committed group of students, that have been tirelessly working on their cases for the past three months. We are therefore extremely excited to host the third annual Blockchain Challenge Finale, for the class of 2021.

On May 11, the students will pitch their cases and present their project findings during a public event. They will present their concepts, showcase the applications they have developed, and thereby compete for the title “Blockchain Challenge Champion 2021.”

If you are interested in seeing how this novel technology can be applied in various industries, this is a great opportunity. The event will take place online (via Zoom Webinar) and is free of charge.

→ Register Now: <https://www.unibas.ch/en/dlffintech/blockchain-challenge/>

Prof. Dr. Fabian Schär

Managing Director Center for Innovative Finance, University of Basel
Credit Suisse Asset Management (Switzerland) Professor for DLT/FinTech, University of Basel

Prof. Dr. Aleksander Berentsen

Professor for Economic Theory, University of Basel

Prof. Dr. Walter Dettling

Lecturer for Business Information Technology and Mathematics, FHNW

Final Event of the Blockchain Challenge.

Students present their business cases that they have developed over the semester.

About the Blockchain Challenge

The Blockchain Challenge is a hackathon-like course in which eight teams, consisting of students from a wide range of disciplines, compete against each other. The goal is to develop a blockchain concept based on an actual case that has been provided by one of our project partners. The students tackle technological, legal, and economic aspects of the case, design a visual prototype and develop smart contracts running on a blockchain.

The Process

During the semester, the teams present their progress several times and receive input from business experts and coaches. This year, students worked on cases from partner companies in the fields of banking, consulting, insurance, law, pharmaceuticals, and telecommunications.

The Final Event

On May 11th, the students present their solutions to a public audience, including experts from the field of blockchain technology. You can expect innovative solutions for the many technological challenges in today's corporate world.

Registration

You may register via our website. The event is public and can be attended free of charge.

→ <https://wwz.unibas.ch/en/dlftfintech/blockchain-challenge/>

17:00 – 17:15	Introduction Prof. Dr. Fabian Schär, Managing Director Center for Innovative Finance and Credit Suisse Asset Management (Swit- zerland) Professor for DLT/Fin- Tech, University of Basel
17:15 – 17:20	Opening Speech Andri Silberschmidt, Member of the Swiss National Council.
17:20 – 19:30	Case-Presentations The Teams present their projects.
19:30 – 19:45	Wrap-Up and Q&A Prof. Dr. Fabian Schär
19:45 – 20:00	Award Ceremony Prof. Dr. Fabian Schär

Event Organizer:

Center for Innovative Finance, Faculty of Business and Economics, University of Basel.

Project Partners:

AXA, BearingPoint, Burckhardt, Bank CLER, Credit Suisse Asset Management Switzerland, Novartis, Swisscom Blockchain, Top-Pharm.

Network Partners:

Arbeitgeberverband, Kanton Basel-Stadt, Handelskammer beider Basel, Vereinigung Basler Ökonomen, WWZ Forum.

The Cases of the Blockchain Challenge 2021.

Students completed the cases of the following project partners.

Smart Contract Insurance

Case provided by AXA

Laslo Dosa, Albi Tahiri, Thom van Rijn

Decentralized Finance (DeFi) has grown exponentially over the past year. However, users looking for exceptional returns on their investments often underestimate the risks associated with Smart Contracts, which are the fundamental building blocks of DeFi. The main issue arises from not perfectly securely written Smart Contracts, resulting in bugs and opening up potential attack vectors which can be exploited. Such imperfect code coupled with the decentralized nature of public blockchains and the resulting immutability of transactions can cause a permanent loss of crypto assets locked within DeFi protocols. Therefore, the vision of AXA is to create an insurance product for DeFi Smart Contracts, and the students were challenged to develop a solution for DeFi users.

Physical Assets Tokenization

Case provided by Bearing Point

Oliver Keller, Dominique Ostermayer, Dario Thürkau

Physical assets are highly complex investments due to idiosyncratic valuation mechanisms, high financial entry thresholds, and long processing times. Multiple layers of trusted parties are usually involved in a transaction of physical assets due to complexity and the concomitant low trading activity, as well as the necessary high level of expertise. This results in high transaction costs, asymmetric information, trust as well as counterparty risks. The transition of physical assets to a blockchain by tokenization is a holistic solution to the in-

vestment case of physical assets. Our project Opus builds bridges between the blockchain and the physical world by tokenization, unlocking novel investment opportunities for institutional and retail investors alike: A modular tokenization framework for fine art with extensibility to any type of mobile physical asset. The Opus tokens are a vehicle for fractional ownership of a specific artwork based on the Ethereum ecosystem. The Opus framework reduces the number of trusted parties involved in a transaction of physical assets while expediting settlement and improving information flow and price discovery.

Lending and Borrowing of Crypto Assets

Case provided by Bank CLER

Tobias Schaffner, Alain Schaller, Samuel Welde

Bank Cler recently announced their upcoming entry into the crypto asset market. To extend this offer, the students proposed several add-on solutions that expand the current concept beyond its initial footprint. The main focus lies on a bridge solution, enabling simple, intuitive, and smooth transitions to the DeFi ecosystem. Bank Cler customers have the option to lend and thus earn interest on their crypto assets with only a few simple steps through their existing e-banking application. The team prototyped interactive mockups and developed an actual bridge, allowing Bank Cler an easy and seamless implementation.

The Cases of the Blockchain Challenge 2021.

Students completed the cases of the following project partners.

Blockchain Technology and Last Wills

Case provided by Burkhardt AG
Nico Born, Annika Kristina Hansen, Pirmin
Can Özdemir

Storing and safekeeping the last will under today's jurisdiction can be challenging, especially to ensure the will's existence, validity, and genuineness to the descendants. How do we know that a last will actually exist and whether the version at hand is indeed the most recent one? How can we ensure that the will-maker was sound of mind when creating his last will and that it has not been modified in the meantime? The students were asked to develop a blockchain-based concept addressing these problems.

Blockchain-Based Rental Lease Asset Management

Case provided by Credit Suisse Asset Management Switzerland
Stefan Alfonz, Brian Kilchenmann, Annika Neumann, Felix Novotny

"Liquispace" connects landlords and rental lease contract owners to a marketplace where they can liquify unused rental lease space or acquiring new rental lease space in an easy and compliant way through a blockchain-based platform, which guarantees that all business-critical requirements are fulfilled. The platform aims to improve time to market and to gain flexibility on managed real estate portfolios. It offers easy access to an open marketplace for rental lease assets with various opportunities to acquire or offer commercial rental space. Key features of the platform are: Easy access to an open marketplace for rental lease asset, where every-

one can acquire or offer commercial rental space; an Ethereum blockchain-based process with an integrated rental auction; and a Smart contract-based authentication and contract signing process, deployed on the Ethereum blockchain providing a transparent and traceable audit trail.

Electronic Product Information (ePI)

Case provided by Novartis
Vanessa Abegg, Manuel Baez, Josep Brunet Kunz, Luca Finkler-Haack

PharmaLedger, a leading consortium of 29 partners, including Novartis, aims to create a Blockchain-based platform for the healthcare industry. One of the most advanced use cases is the implementation of Electronic Product Information (ePI). The ePI solution allows manufacturers to profit by having faster manufacturing adaptability and cost reduction. In order to upscale such a blockchain ecosystem, it is necessary to prove that it is sustainable at a small scale and can integrate all stakeholders with different goals and interests. We designed a mock-up that visualizes the governance structure and shows what incentives are used to create a developer community to contribute to PharmaLedger. In addition, we propose creating a foundation funded by the membership fees of manufacturers in PharmaLedger and others who wish to join. This governance model will allow the balanced distribution of power inside the ecosystem regarding decision-making processes.

The Cases of the Blockchain Challenge 2021.

Students completed the cases of the following project partners.

Sustainable Finance Tokenization

Case provided by Swisscom Blockchain
Alisha Amrein, Dominic Richner

Swisscom challenged us to foster sustainability through the use of blockchain technology. This case aims to employ this novel technology to provide a higher degree of transparency and flexibility, align incentives in the sustainable investment market, and mitigate greenwashing in sustainable finance. Sustainable projects are represented as digital assets, called tokens, on a Blockchain platform. Corporate investors interested in environmentally or socially impactful investments can then purchase these tokens using stablecoins and cryptoassets. Whenever investors obtain such a token, they receive additional sustainability tokens as a reward. These tokens work as reputable achievements and can be publicly verified. Such a platform can mobilize investors to support more sustainable activities and provide them with valid proof of their involvement, preventing greenwashing.

Blockchain Loyalty Network

Case provided by TopPharm
Wenqi Li, Dominik Merz

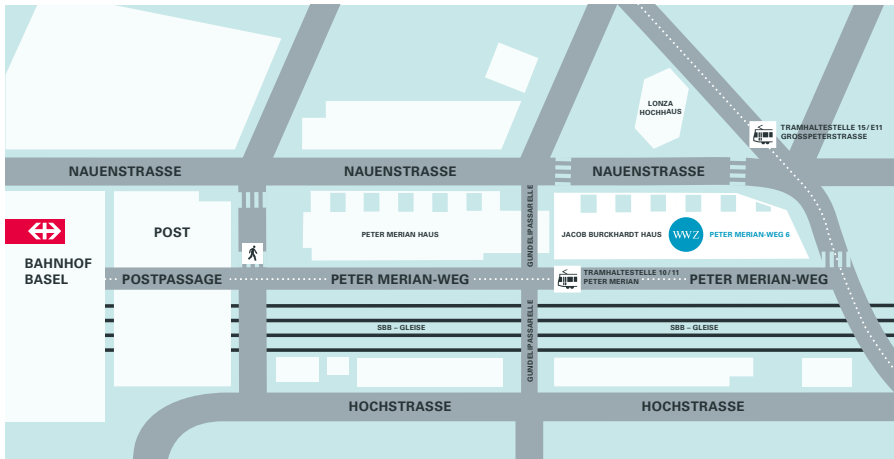
AccountChain is a decentralized, fully transparent, and fraud-protected loyalty platform. It ensures data security and efficiency by automating accounting processes in a trusted technological environment. Moreover, the integrated unambiguous identification access mechanism allows all branches in your business network to interact with each other transparently. All data is cryptographically validated and stored decentrally, prevent-

ing fraud and cyber-attacks. Additionally, AccountChain facilitates the management of reciprocal financial liabilities between all branches, allowing customers to spend their loyalty points anywhere in your network. Furthermore, it simplifies VAT accounting through its flexible real-time reporting, providing an overview of key financial figures – trustworthy and without any delay. AccountChain helps not only in reducing marketing costs but also in developing a profound understanding of customer behavior by delivering end-to-end tracking of transaction data. Finally, the system leverages sales by allowing the simple execution of special promotions in individual branches or simultaneously for the entire network.

Event Participation

This public event will be conducted online via Zoom Webinar. Participation is free of charge, and you can attend via any computer or smartphone.

Registration is possible via our website:
<https://wwz.unibas.ch/en/dlftfintech/blockchain-challenge/>



Educating Talents since 1460.

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About the Center for Innovative Finance of the University of Basel

The “Center for Innovative Finance” (CIF) of the University of Basel is engaged in the fields of Fintech, Digital Banking, and Finance. Our research focuses on the scientific analysis and practical implementation of Blockchain projects, venturing, and innovative financial solutions. With this research focus, the CIF is unique in Switzerland and makes a decisive contribution to the research and application of future-oriented technologies — also in the context of social consequences.