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DIGITAL INNOVATIONS IN YOUTH FOOTBALL: ENHANCING THE FAN
EXPERIENCE AT THE MTU CUP

NINA SOPHIE SEGELBACHER

Work project carried out under the supervision of:

Graham Miller

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Abstract

This master's thesis examines how digital innovations can improve the fan experience using the case study of the MTU Cup youth football tournament. The focus is on the research question: 'How can digital innovations enhance the fan experience at the MTU Cup?' This thesis was conducted using qualitative research methods. Expert interviews show that new technologies such as body cameras on jerseys, cameras under the pitch and interactive event apps can make the fan experience more immersive and interactive and are an important building block for the future of the MTU Cup. This thesis seeks to identify and analyse these innovations and implement them in the future. Regarding this, the thesis contributes to the digital transformation of sporting events using the MTU Cup as an example.

Keywords:

Digital Innovations

MTU Cup

Youth Football

Fan Experience

Please note, some of the quotes were translated from German to English.

Supporting tools such as DeepL (for translations) and AI (for stylistic rewording) were therefore used for the linguistic revision. The content was created, selected and reviewed independently and with scientific rigor. Furthermore, as agreed with the supervising professor, all references were formatted according to the APA citation style (7th edition), deviating from the general referencing recommendation outlined in the Nova SBE Work Project guidelines.

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1 Introduction

Fans expectations of sporting events are changing rapidly. This is particularly true given the growing importance of digital innovations that go far beyond traditional digitalization. While digital technologies such as AR and VR, interactive apps and personalized fan offerings are already widely used in professional sports, youth football is still evolving when it comes to innovative fan experiences. International youth tournaments such as the MTU Cup yield an ideal platform for using new digital solutions to shape the fan experience in a targeted manner and create lasting enthusiasm for youth football. This is achieved primarily through immersive “VR experiences, smart stadium technologies and community-based platforms” (Capgemini Research Institute, 2020, p. 12). Studies indicate that young target groups and families in particular have a growing interest in such offerings, which can significantly increase the appeal and reach of sporting events (Kawohl et al., 2020).

1.1 Structure of the Thesis - Research Question & Objectives

The following research question is the focus of this thesis: ‘How can digital innovations enhance the fan experience at the MTU Cup?’ The aim is to identify, analyze and evaluate new digital innovations in order to make the fan experience at the MTU Cup more interactive. This thesis thus contributes to closing a current research gap and offers practical insights for the further development of youth football tournaments in the digital age. It is divided into six main chapters: Introduction, Literature, Methodology, Results & Discussions, Conclusion & Recommendations and Sources & Appendix. Following the introduction, Chapter 2 outlines the theoretical foundations, current research, and the case study. Chapter 3 presents the methodological approach and expert interviews. Chapters 4 and 5 summarise key findings, discuss implications, and provide recommendations and limitations.

2 Literature

2.1 Digital Innovation in Sports & Fan Engagement - Status Quo

"Sport is passion. No matter what country, no matter what language, sport inspires and connects people worldwide" (Morris, 2022). This Quote by Morris shows that sport plays an important role in the society by connecting people emotionally and culturally. According to Xiao (2017), digitalisation in sport uses technology to improve fan interaction, simplify processes and strengthen viewer loyalty. Smart technologies are increasingly helping to simplify complex processes and are also relevant for the sports sector in long term (Stadionwelt, 2022). With the increasing use of technology and advancing networking, it can be assumed that these developments will continue to grow (Harwardt & Schmutte, 2022, p. 13). This leads to a growing need for change and flexible adaptation, as well as a rethink at all levels (Harwardt & Schmutte, 2022, p. 10). According to Morris (2022), the market value of the digital economy has reached more than 4 trillion US dollars, demonstrating the relevance of digital innovations in the sports sector. Future-oriented Innovations are playing an increasingly central role, in the context of sport. Companies and clubs are faced with the challenge of investing specifically in digital technologies in order to meet consumer expectations (Tamaslugosi, 2024). According to a study by the Capgemini Research Institute (2019), 70% of 10,000 respondents say that "new technologies improve their fan experience both inside and outside the stadium" (Tamaslugosi, 2024). The following chart from Capgemini Research Institute's 2019 report "Emerging technologies in sports: Reimagining the fan experience" shows how diverse and successful digital technologies are already integrated into the stadium experience:

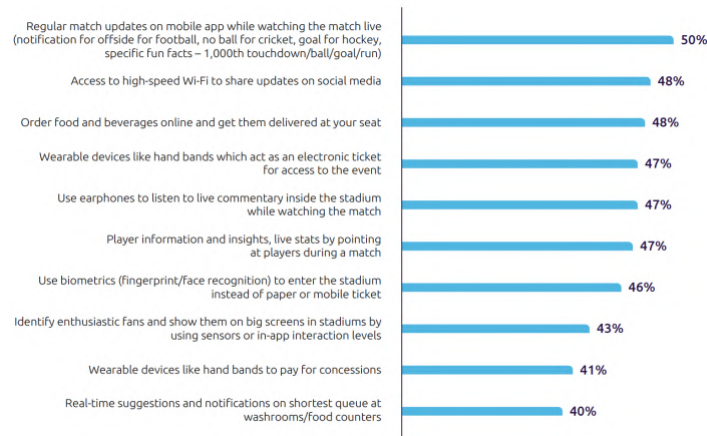


Figure I: Top 10 in-stadium experiences of emerging technologies. Reproduced from *Emerging Technologies in Sports Research, Fan Survey*, December 2019 (Longu  p  e, p. 12), by Capgemini Research Institute (2020). Based on a survey of 10,363 fans, including 9,008 who have visited a stadium. Copyright 2020 by Capgemini.

The chart shows the most commonly used digital technologies when visiting a stadium, based on a survey of 10,363 fans, including 9,008 stadium visitors (Capgemini Research Institute, 2020). It indicates how deeply digital offerings are already integrated into the stadium experience, such as mobile updates, high-speed Wi-Fi, and biometric access. More than half of fans have already had contact with these technologies, highlighting the increasing relevance of digital innovations for the fan experience. The results provide an important basis for considering how digital technologies can also be used in youth football to make the fan experience contemporary and interactive. "Arenas and stadiums are not just places where events take place; they are centres of excitement, energy and large crowds" (Paige and JTech, 2024). "In the past, fan engagement was mainly limited to attending games, listening to radio broadcasts or reading newspaper articles" (SportMember, 2024). Fan behaviour has changed. Today, social media channels and streaming services play a major role in fan engagement. These platforms make it possible to offer live updates, interactive features and discussions, creating an emotional connection and enhancing the fan experience. This development shows how much digital technologies have changed the fan engagement. This makes it clearer that new ways of fan interaction are also conceivable in youth football.

2.2 User Experience (UX) & the Role of Digital Technologies in Sports

A user experience (UX) describes a user's experience when interacting in a digital world. Kuenen (2019) defines experience as the interplay of all aspects of the customer journey while using a service or product. The goal is a positive experience that leads to high customer satisfaction. Digital sports platforms and consumption patterns have changed fundamentally (Gao et al., 2024). In the digital age, it is important to combine physical and digital fan-oriented measures in a meaningful way. Virtual worlds in particular are creating new opportunities for fan engagement, enabling clubs and event organisers to anchor themselves in the minds of fans in the long term (Koch & Müller, 2022). Digital user experiences in sport are being used specifically for strategic fan engagement (Diwo, 2025). This engagement aims to create emotional closeness, social interaction and long-term relationships. The Fan Engagement Model by Yoshida et al. (2014, p. 407) provides a sound theoretical basis for analysing these effects and serves as a benchmark for measuring fan engagement. The model was developed based on data from professional sports. While UX describes general user experiences, the model developed by Yoshida et al. (2014, p. 407) shows how digital technologies can be used specifically for fan engagement. The model distinguishes between three behavioural dimensions: *management cooperation*, *prosocial behaviour* and *performance tolerance* (Yoshida et al., 2014, p. 407). These dimensions manifest themselves in fans through co-creation, community activity and continued support, even in the face of sporting failure (Yoshida et al., 2014, p. 407). While Yoshida's model offers a theoretical foundation, Koch & Müller (2022) translate it into a practical framework with the dimensions: *emotional identification*, *social interaction* and *loyalty*. These terms are based on Yoshida's model but are not used literally by Koch & Müller (2022).

Research dimension (Yoshida)	Digital realization/ practical adaptation (Koch & Müller, 2022)	Practical example of spectator behaviour/industry comparison
Management Cooperation (Voluntary participation)	Loyalty programs with real-time statistics	Bundesliga Match Facts App (xG, Speed Alarm) (DFL-Npozniak, 2024)

Prosocial Behaviour (community building)	Second-screen interactions	WM 2018: Live-Chats & stats via apps (Oelrichs & Leinfelder, 2020, p. 55]
Performance Tolerance (binding independent of results)	Immersive technologies (AR/VR)	ManCity VR stadium tours (Man City Editorial, 2024)

Table I : *Own illustration based on Yoshida et al. (2014) and Koch & Müller (2022)*

The chart below shows a comparison of the three central scientific research dimensions according to Yoshida et al. (2014, p. 407) and their digital implementation in practice. Digital technologies like virtual reality experiences, live statistics, and second-screen formats demonstrate how they can enhance fan engagement. The dimension of “management cooperation” can be explained using the example of the Bundesliga Match Facts app, which has been providing real-time statistics such as "expected goals" and "speed alarm" since 2020 through its cooperation with AWS (Bundesliga, 2021). The 2018 World Cup provides evidence of “prosocial behaviour” with second-screen apps: "62% of fans used live chats and statistics in parallel with the broadcast for social interaction" (Oelrichs & Leinfelder, 2020, p. 55). The performance tolerance concept is being implemented at Manchester City through VR stadium tours with Sony, which increased fan loyalty by 37%, regardless of the sporting result (Man City Editorial, 2024). The digital revolution has fundamentally changed the sporting experience. Technologies such as VR, streaming platforms and interactive apps enable fans to enjoy sport in new ways, live in the stadium or at home (Kenzo, 2024). Modern stadiums are now experienced worlds that offer live statistics and immersive analysis through AR and VR (Kenzo, 2024).

2.3 Best Practices from Professional Sports & Other Industries

Digital technologies open up a wide range of possibilities for designing new forms of fan experience. They are changing the way fans consume sport, interact and engage emotionally (Gao et al., 2024, p. 21). Best practices illustrate how the targeted use of individualization, immersion and data-based personalization can sustainably intensify the relationship between spectators and sports offerings. Successful formats have already been established, particularly in professional sports and other industries, which can serve as a source of inspiration for future

developments (Ratten, 2018, p. 3). Formula 1 offers an established best practice example in the field of live streaming and individual viewing, combining individualization and data-driven fan experiences. Each car is equipped with over 300 sensors that collect extensive performance data such as speed, braking behaviour, tyre status and engine temperature in real time and transmit it to the team (Schmidt, 2024). This data is not only used to make strategic decisions during the race but is also made available to fans via digital platforms (Ambler, 2025). Using the F1-TV Pro streaming service, viewers can choose between different driver perspectives, live data and team radio, allowing them to enjoy a personalised racing experience (Formula 1, 2025). This technology creates emotional proximity to the action, resulting in a unique fan experience that increases satisfaction. Another best practice example in the field of AR/VR & interactive fan elements is provided by the National Basketball Association (NBA). The NBA is setting new standards for digital fan engagement with its Virtual Courtside Experience. “NBA fans can watch virtual reality games this year with Meta Quest VR headsets” (NBA, 2025). Since 2024, viewers have been able to watch 52 live games per season (Erl, 2024). The technology offers a player's perspective through 360-degree cameras on the baskets (SMG Central, 2024). Real-time statistics are available for NBA League subscribers (DeGennaro, 2021). According to Butts (2024), Meta emphasizes that the NBA's VR broadcasts offer a particularly intense and immersive fan experience. The virtual presence on the sidelines promotes an emotional closeness that goes beyond traditional broadcast formats such as live streams. The OneFootball app is considered a particularly consistent example of AI-based personalization in the sports sector. The app “is a popular sports platform with a strong community that focuses on football as a global media company” (Gabriel, 2023). OneFootball is a best-practice example that illustrates how algorithm-based systems can be used to tailor content to individual fan interests. The platform uses algorithms and AI to personalize content for each user. “As the ultimate football platform, our mission is to bring fans closer to football and football closer to fans”

(OneFootball, 2025). The app offers many features that allow OneFootball to use AI and algorithms to decide which notifications are displayed to the user based on personalized data. These include match predictions and automated text generation (Butta, 2022). OneFootball uses AWS Lake Formation for efficient data analysis, which has significantly reduced lead times for data delivery. This enables internal teams to make data-driven decisions and develop machine learning models (OneFootball AWS, Amazon, 2020).

2.4 The MTU Cup: Contextualization as a Case Study

The MTU Cup is Europe's largest under-15 indoor tournament and has been held annually in Friedrichshafen since its inception in 2003. The tournament is organized by the football department of VfB Friedrichshafen. In 2024, the tournament celebrated its 20th anniversary. Over the past two decades, the tournament has developed from a small local event into an international tournament. The event attracts over 7,500 spectators on both days of the tournament. Among other things, sponsors play a central role in the budget and organisation of the MTU Cup, as the tournament is entirely dependent on their support (VfB Friedrichshafen, 2024). The name of the tournament comes from the main sponsor MTU-Friedrichshafen, which today operates under the name 'Rolls-Royce Solutions GmbH' (Eurailpress, 2021). Each year, 24 teams participate in the MTU Cup, including top international clubs like FC Barcelona, Manchester United, Bayern Munich, and Chelsea FC. For the 20th anniversary in 2024, main organizer Klaus Segelbacher expanded the field of participants to include teams from five continents for the first time. Among the participants were: FC Dallas (North America/ USA), Sudeva Delhi FC (Asia/ India), SE Palmeiras (South America/ Brasil) and BK West United FC (Africa/ Gambia) (Segelbacher & Müller-Hirlinger, 2024). In order not to lose the tradition of the tournament, regional clubs from Friedrichshafen and the surrounding area are invited every year, as these clubs have been an integral part of the tournament since its inception. "World-renowned football clubs are among the participants in the MTU Cup every year, one of the most

important youth indoor football tournaments in Europe” (Dörge, 2024). Many of today's national players, football stars and legends took part in the tournament in their youth. These include, for example, the German world champions from 2014: Thomas Müller, Mario Götze, Manuel Neuer and Mats Hummels (History of MTU Cup, 2003). An event with global reach but a local core offers ideal conditions for a SWOT analysis in terms of digitalization and innovation for the future of youth football. This analysis is more urgent given that, according to Deutscher Sportjugend (Dsj, 2023), the industry is showing a high willingness to innovate, but concrete digital implementation remains fragmented. The following analysis systematically identifies the key strengths, weaknesses, opportunities and risks about the digital fan experience of the MTU Cup.

Strengths	Weaknesses
<ul style="list-style-type: none"> - Exclusive field of participants (the international top clubs increase relevance & attractiveness) - High on-site attendance - Youth soccer as a field of innovation (young target groups are open to interactive Apps and formats) 	<ul style="list-style-type: none"> - No digital fan interaction & personalization (e.g. apps, gamification) or advertising on the perimeter boards - No digital ticketing: missing NFT tickets or digital collectibles for fans (Fan-App) - Outdated website: no integrated streaming or community features - No augmented reality (AR) features (e.g. virtual player info overlays for live spectators, player profiles, voting functions)
Opportunities	Threats
<ul style="list-style-type: none"> - Live streaming & digital broadcasts: (Expands global reach and offers sponsors new promotional opportunities) - Interactive fan apps: (providing real-time statistics and interactive elements for fans) - Modern sponsorship models: Dynamic advertising spaces and digital fan sponsorship options - Data-driven personalization: Individualized content based on fan preferences 	<ul style="list-style-type: none"> - High implementation costs: livestreams, AR/VR solutions and real-time statistics tools require expensive infrastructure (e.g. cameras) - Clubs, fans or organizers could reject digital innovations as `unnecessary` or `commercial` - Generation gap: Older target groups may prefer traditional stadium experiences or less interactive tools - Data protection requirements -> especially for underage players

Table II: Own Illustration SWOT analysis related to MTU Cup

The SWOT analysis clearly shows that, despite its international significance and tech-safe target group, the MTU Cup has so far made only very limited use of digital innovations. While targeted digital measures offer great potential to boost fan loyalty and reach, existing shortcomings highlight the urgent need for action to remain competitive.

3 Methodology

3.1 Research Question

The research question formulated in the introduction is examined in this master's thesis by means of qualitative expert interviews. Two perspectives were considered. On the one hand, experts from the MTU Cup organisation team `members of VfB Friedrichshafen` and, on the other hand, those responsible for the `participating international youth teams`. To answer the research question, this master's thesis aims to provide information on the possible applications and potential impact of digital innovations for improving the fan experience using the MTU Cup as an example. The central research question of this thesis is: `How can digital innovations enhance the fan experience at the MTU Cup?` This research question is the focus of the entire thesis. The aim is to identify concrete and practical innovation approaches that go beyond the current state of the art.

3.2 Study Design & Procedure

Interviewguide:

The Interviewguide begins with the introduction of the researcher, followed by a brief thematic introduction and icebreaker questions to initiate an open dialogue. The main questions are designed to provide focused insights relevant to the research question. As Hauff (et. Al 2008, p. 95) emphasize, the selection of question types depends on the primary objective of the expert survey. The interview guide for this master's thesis is divided into three thematic clusters and comprises a total of 16 open-ended questions. Although two separate guides were initially planned, a uniform guide was used to ensure comparability across all interviews. Each interview starts with an introduction of the interviewee and a brief explanation of the study's purpose, interview procedure and data protection. Introductory parts are not transcribed, as only the interview responses are relevant for analysis. The three clusters are structured as follows: Cluster A deals with the perception and status quo of digital innovations and the fan experience in a sports context. The aim of this cluster is to gather basic assessments and observations on

current developments and trends and to derive recommendations for action. Cluster B focuses on the potential of digital innovations for the fan experience and fan loyalty using the example of the MTU Cup. Specific technologies, their acceptance and inspiring examples from professional sport are discussed here. Cluster C covers challenges, limitations, implementation ideas, and future prospects for digital fan experiences in youth football.

Selection and introduction of the experts:

For this study, experts were specifically selected through an existing professional network. The key selection criterion was that all respondents are actively involved in the MTU Cup and therefore have practical experience with digital innovations in international youth football. In order to ensure as broad a perspective as possible, attention was paid to diversity in terms of club affiliation, countries of origin and language areas. In terms of content, the interviewees can be divided into two target groups: On the one hand, members of the MTU Cup organisation team, who are responsible for planning, running and implementing the tournament were interviewed. Secondly, representatives of participating youth teams were interviewed, including coaches, analysts and sports coordinators who actively accompanied their teams on site and worked with digital tools. The combination of both perspectives allows for a differentiated analysis of the use of digital technologies at both the event and club levels.

Name	Age	Club	Current Position	Relevance for the Study	Connection to the MTU Cup
Lee Unsworth	52	Manchester United	Youth Coach U9–U16, Manchester United, Community Coach	Extensive experience in youth development, use of digital planning tools	Team manager for ManUnited, coordination of logistics and communication
Matthias Brosamer	42	VfB Stuttgart	Head of International Youth Development and Partnerships, VfB Stuttgart	International youth development, digital training documentation and support of international teams	Organization of training and matches at MTU Cup
Hugo Uygur Sezgin	44	Eintracht Frankfurt	U15 Head Coach, Eintracht Frankfurt	Experience with digital training methods and match analysis in youth football	Supervision of the U15 team at the MTU Cup
Ethan Heseltine	25	The Football Association (formerly Manchester United)	Casual Pathway Analyst, Lead Analyst, The Football Association	Digital match analysis: Match-Videos, movement data tactical decision-making in youth football	Participated as Performance Analyst for Manchester United
Neil Ryan	50	The	England U17 National	Experience in youth	Participant as U15

		Football Association (formerly Manchester United)	Head Coach, The Football Association	development at both club and federation level, use of digital scouting and analysis tools for match preparation and review	coach for Manchester United
Léo Jamet	27	Olympique de Marseille	Sports Coordinator, Youth Academy, Olympique Marseille	Responsible for tournament coordination, logistics, and digital match analysis in French youth football	Participant as part of Marseille's support staff
Pol Playà Gascón	36	FC Barcelona	Sports Administrative, Sports Team Delegate, FC Barcelona	Uses digital systems for internal communication and management	Part of FC Barcelona's delegation (Team Management)

Table III: Own illustration, Presentation of the experts from the participating youth teams

Seven individuals were interviewed for the selection of experts. They had accompanied their respective youth teams at the MTU Cup as 'Experts of Participating Youth Teams'. A key selection criterion was that all interviewees had extensive practical experience in youth football and were actively involved in youth development, whether as coaches, analysts or sports coordinators. Diversity was deliberately sought: the experts come from different countries such as England, Germany, France and Spain, represent renowned clubs such as Manchester United, Eintracht Frankfurt, VfB Stuttgart, Olympique Marseille and FC Barcelona, as well as the Football Association, and speak different languages. All experts have participated in the MTU Cup at least once or several times and were therefore able to provide concrete insights into its processes and structures.

Name	Age	Role at the MTU Cup
Klaus Segelbacher	59	Head Organizer
Kristjan Jakic	51	Responsible for YouTube channel & digital content
Sandro Musso	50	Organization Team
Henry Schwedt	52	Live streaming, advertising, and media/audio in the hall
Boban Savic	50	Spectator and Coach at VfB Friedrichshafen
Andreas Müller	55	Co-Head Organizer
Dennis Nikic	39	Youth Coordinator U8–U15
Nadja Röhm	26	Social media and Video Editing

Table IV: Own illustration, Presentation of the experts as members of VfB Friedrichshafen (MTU Cup Organisers)

The listed experts are directly involved in the MTU Cup organisation and cover areas such as coordination, planning, media, streaming, digital communication and content creation. They were specifically selected to represent different perspectives within the organizing team. As the respondents from the association are responsible for the structure and implementation of the tournament, they have detailed knowledge of the internal organizational processes.

Conducting of the interviews:

All interviews were conducted separately to ensure that the experts could express their opinions as independently and authentically as possible. Due to the different time zones and international backgrounds of the experts, the interviews took place on various days between 1 and 21 April 2025. The duration of the individual interviews varied, as some experts answered the sub-questions in detail and thus provided detailed insights, while others gave shorter or less detailed answers. Before the interviews began, all participants were informed that their names would be mentioned in the study, and they agreed to this.

Transcript:

The individual expert interviews were conducted using the recording function provided by Apple, which enabled automatic transcription of the spoken word. The transcripts were then carefully reviewed and corrected where content had been misunderstood or inaccurately reproduced. A document summarizing all questions and answers was created for the evaluation. This document is divided into two sections: one containing the responses from the VfB Friedrichshafen experts and the other containing the responses from the experts from the participating youth teams. The transcription was done word for word.

3.3 Data Analysis

Overview of Mayring's Qualitative Content Analysis:

To analyse the expert interviews, this study uses qualitative content analysis according to Mayring (2010). This method allows a systematic reduction and categorisation of the transcribed material. "Qualitative content analysis according to Mayring is a structured, qualitative method for evaluating text-based data" (Kohlbrunn & Kötter, 2022). In addition, it is important to "create an elaborate category system for a summary interpretation of the data material" (Hauff et al., 2008, p. 103). The qualitative content analysis is carried out using a seven-step process model based on the methodological guidelines of Mayring (2010). After analysing the material, which has been described in detail and precisely defined by the research

question, analysis units are determined (Mayring, 2010, p. 69). All text passages without content are deleted. In the next step, the level of abstraction is determined and all phases below this level are generalized. Once this has been done, all paraphrases with the same content that have no meaning can be deleted. It is particularly important to double-check the summarized category system against the source material. This step completes the first round of summarizing. If the material needs to be summarized again, the entire process can be repeated.

Methodological Reflection on the Expert Interviews:

The expert interviews were designed to result in largely self-sustaining discussions. If this is not the case, the researcher can steer the interview towards a sub-question or the next question. The interviewees are independent of each other in terms of their socio-demographic background and horizons of experience. Gender, age and origin are also irrelevant (Mey et al., 2022). However, with regard to the research question, the selected interviewees should all be very closely connected to the topic, as they must be experts. The research is intersubjective, as another researcher could carry out the same content analysis with the same results. It is therefore up to the researcher to specify exactly how the data collection, analysis and subsequent interpretation are to be carried out so that a neutral evaluation can take place (Kaiser, 2014, p. 6). As in any research process, a “decision on the direction” (Kaiser, 2014, p. 7) has to be made, as the research question influences the selection of experts and the course of the interviews. This means that it cannot be accurately assessed whether these are representative. If the appropriate answers are not given, buffer questions are used to steer the conversation back to the actual question. Thus, a somewhat subjective view will always play a role in the questioning in order not to deviate from the actual topic.

Practical Implementation of the Analysis Process:

The complete transcribed expert interviews can be found in the appendix of this thesis. The next step was an initial reduction, in which irrelevant or redundant text passages were deleted

in order to limit the data material to the most essential content. This initial reduction was carried out directly in the transcripts using the selection tools in Microsoft Word. The reduced version of the transcript was then transferred to the data analysis programme MAXQDA for further analysis. Crossed-out passages in the transcripts indicate content that was removed during the reduction process. The statements made by the experts were then analysed in sequence. The content was systematically coded using MAXQDA. An inductive-deductive category formation was used: on the one hand, the categories were based on the previously developed interview guide (deductive), and on the other hand, further categories were formed inductively from the experts' statements. At the end of the first run, the following categories were formed:

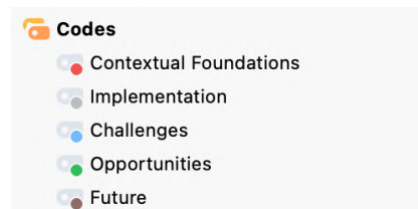


Figure II: List of codes created (categorization system) (own illustration, 2025)

After the initial coding round, the category system was systematically reviewed against the source material. This was done to ensure consistency and clarity. Categories that proved to be ineffective or did not contribute significantly to the research question were adjusted or removed. Although the category 'Contextual foundations' does not directly contribute to answering the research question, it was initially included in the coding process. As it aids in understanding individual statements, it is placed in brackets and retained as contextual information. Finally, the clear and well-structured category system shown in the table was developed.

4 Results & Discussion

4.1 Results of the Survey & Interpretation

The results of the survey are presented in the following section. The categories are explained and illustrated using the most important anchor examples. The results are based on the guidelines that were drawn up.

Category: Contextual Foundation:

The category 'Contextual Foundation' was created to capture key framework conditions for the use of digital innovations at the MTU Cup and to introduce the topic. It covers organizational, technical and resource-related aspects such as the institutional involvement of experts, budget restrictions, technical infrastructure, previous social media activities and external influences. The category serves as a basis for classifying structural requirements and shows the conditions under which digital measures to improve the fan experience can be planned and implemented.

Anchoring Examples:

Segelbacher (Expert, organisation of MTU Cup): *"In the past, a simple website may have been enough, but today, fans expect livestreams, up-to-date content on social media, and opportunities to engage directly with the tournament experience. Even smaller events need to adapt if they want to remain attractive in the long term. Even within our own organization, we can feel how digital innovations are becoming increasingly important."* (Questionnaire, p.3, item 28)

Segelbacher (Expert, organisation of MTU Cup): *"The most important thing is the sport itself and what actually happens on the field -> goals, goals, and great moments of play. Everything that takes place before and after a match is what we call the fan experience"*. (Questionnaire, p.8, item 64)

Playa (Expert, participating Youth Team): *"I am part of the delegation that travels with our youth team (FC Barcelona) to the MTU Cup. From my perspective, it is a fantastic opportunity to see how different clubs operate and to connect with coaches, organisers, and fans from other countries. The atmosphere is intense but also very welcoming"*. (Questionnaire, p.14, item 104)

Jakic (Expert, organisation of MTU Cup): *"The MTU Cup is organized on a voluntary basis [...] With a budget of 20000 to 50000 euros, professionally produced highlight videos of players could significantly increase global visibility. At the moment, content is often randomly picked up by private users or international media, which shows the enormous potential of the tournament but also highlights the need for a more structured approach"*. (Questionnaire, p. 13, item 99)

The experts clearly state that expectations for digital offerings such as live streams, up-to-date social media content and opportunities for interaction are continually increasing at the MTU Cup. This is particularly apparent in Segelbacher's observation regarding changing fan needs. This development is also reflected in the literature: Capgemini (2020) shows that over 70% of fans see digital technologies as enriching their fan experience. Studies such as those by Kawohl et al. (2020) also confirm the growing interest of young target groups in digital formats. At the same time, Jakic's reference to the voluntary organisational model and limited financial resources makes it clear that implementing innovative solutions in youth football is much more challenging than in professional sport. Playa also emphasises that the international orientation and family atmosphere of the tournament offer special opportunities for digital innovation, as

they create a close connection between fans, teams and organisers. This community orientation clearly distinguishes the MTU Cup from large-scale professional events and requires digital measures. The fan engagement model developed by Yoshida et al. (2014) underscores the importance of emotional identification and social interaction for fan loyalty. These aspects can be particularly promoted at the MTU Cup thanks to its family atmosphere and strong community involvement. Digital innovations have the potential to further build on these strengths, for example by creating platforms for international exchange. It is crucial that digital innovations are not developed in isolation, but always in the context of existing resources, tournament culture and the needs of the target groups. In this way, the MTU Cup can successfully leverage digital innovations despite structural challenges. Firstly, to modernise the fan experience, secondly, to reach new target groups and, thirdly, to preserve the authentic, communal atmosphere of the event.

Category: Opportunities (Potentials)

The category ‘Opportunities (Potentials)’ was created to record the perceived opportunities and advantages of digital technologies in the context of fan experience and fan engagement at the MTU Cup. The aim for this category is to identify potential that has not yet been exploited and that could further develop the event through innovative digital approaches. The creation of this category makes it possible to record the possibilities of digital innovations in the context of the fan experience and use them as a basis for initial considerations on the further development of the MTU Cup.

Anchoring Examples:

Playa (Expert, participating Youth Team): *“Digital innovations are an increasingly essential element of modern sports experiences. They have the power to enhance fan engagement, streamline operations, and create more inclusive, exciting, and immersive environments. For me, they represent not just a trend, but a valuable tool that, when used creatively, can bring people closer to the sport and foster a deeper emotional connection to teams and events”.* (Questionnaire, p. 2, item 22)

Heseltine (Expert, participating Youth Team): *“Live streaming of the tournament & virtual experiences. For example, using their smartphone, fans can create a 360-degree scan of themselves that can replace an actual player in a game of the tournament or put them in a team with ex-players who have been to that tournament and gone on to be successful”.* (Questionnaire, p. 18, item 134)

Musso (Expert, organisation of MTU Cup): “*AI powered chatbots for personalized fan interaction: Arsenal London developed a chatbot called ‘Robot Pires’ [...] Fans can interact with the bot to receive match info, player updates, and statistics*”. (Questionnaire, p. 41, item 311)

The experts emphasise that digital innovations at the MTU Cup open up countless new opportunities to make the fan experience even more personal and emotional. Playa sees digital technologies as a creative tool that brings fans closer to the action and enables them to form a deeper connection to teams and events. Heseltine describes how virtual experiences allow fans to actively participate in the tournament, for example by digitally integrating themselves into the game and participating virtually in the action. Such approaches are based on best practices from professional football and the NBA, where VR and AR applications and second-screen formats have long been used successfully to enhance the fan experience (Erl, 2024; Koch & Müller, 2022). Musso brings AI-supported chatbots to the table as another example, which enable individualised and automated communication with fans and can thus further strengthen interaction and loyalty. This principle is also used in the OneFootball app as a best practice model for personalised fan engagement (Gabriel, 2023). The fan engagement model developed by Yoshida et al. (2014) emphasises that emotional identification and social interaction can be specifically promoted through such digital offerings, which is particularly relevant for sustainable fan loyalty at the MTU Cup. The variety of examples cited shows that there is still a lot of untapped potential for creative digital solutions at the MTU Cup. At the same time, it is clear that many of these opportunities have hardly been exploited and should be further developed in a targeted manner in order to increase the reach of the tournament and appeal to new target groups. It is crucial that digital innovations are not just seen as technical playthings but are used in a targeted manner. Above all, this is important in order to strengthen the values of youth football, such as community, participation and enthusiasm, while considering the special conditions of the MTU Cup.

Category: Challenges

The ‘Challenges’ category refers to existing barriers and limitations in the implementation of digital innovations. These include financial constraints, data protection requirements, technical hurdles and implementation problems. The aim of this category is to systematically identify the key obstacles.

Anchoring Examples:

Segelbacher (Expert, organisation of MTU Cup): *"You always have to be very attentive, especially when it comes to data protection. When dealing with images or personal data of young people, the legal requirements are strict and rightly so". (Questionnaire, p. 36, item 273)*

Savic (Expert, organisation of MTU Cup): *"A major hurdle is the budget advanced technologies are often expensive and difficult to implement in youth football. In addition, more cameras, equipment, and personnel would require more space and organizational resources. That makes implementation more complex and demands careful planning". (Questionnaire, p. 37, item 274)*

Jakic (Expert, organisation of MTU Cup): *"The MTU Cup is organized by 200 volunteers. Sponsorship funds only cover essential expenses. There is no marketing budget for innovation. Other barriers include data protection regulations and high moderation workload on social media". (Questionnaire, p. 37, item 280)*

Playa (Expert, participating Youth Team): *"Legal restrictions around data protection, especially when minors are involved, are another significant hurdle. GDPR compliance and proper consent protocols are essential". (Questionnaire, p. 38, item 285)*

The experts comments in this category make it very clear that the implementation of digital innovations at the MTU Cup faces considerable hurdles. Segelbacher and Playa emphasise that data protection plays a particularly important role in the youth sector, as the handling of images and personal data of minors is subject to strict legal requirements and requires the utmost sensitivity. These challenges are also emphasised in the current literature, as compliance with the GDPR and the protection of personal data in the European sports context are considered fundamental prerequisites for digital projects (Capgemini, 2020; Kawohl et al., 2020). Savic and Jakic emphasise that financial and human resources are very limited, as the tournament is almost entirely based on voluntary work and the available sponsorship funds are mainly needed for basic resources. Investments in digital measures are therefore hardly feasible without additional funding. In addition, the technical implementation is often more complex than initially assumed, as new technologies such as additional cameras or digital tools require not only equipment but also trained personnel and expanded logistics. The literature shows that, especially in youth football, acceptance and knowledge of digital offerings among parents and

older spectators are limited, which makes the use of new services even more difficult (ISPO, 2020; Koch & Müller, 2022). At the same time, experts emphasise that digital innovations must not lead to the loss of the special live atmosphere and direct interaction on site, as the MTU Cup thrives on its personal, communal atmosphere. Overall, it is clear that the introduction of digital innovations at the MTU Cup requires a delicate balance. On the one hand, legal, financial and technical barriers must be overcome. On the other hand, the authenticity and special values of the tournament must be preserved in order to improve the fan experience in a sustainable and responsible manner.

Category: Implementation

The category `Implementation` covers specific measures, strategies and implementation steps related to digital innovations at the MTU Cup. These include collaborations, content strategies and the integration of social media. The category assesses the current and future integration of digital innovations to realize potential and foster fan loyalty.

Anchoring Examples:

Nikic (Expert, organisation of MTU Cup): *"Replays of goals on the video walls, the launch of an MTU Cup app, a fan cam, and behind the goal cameras". (Questionnaire, p. 25, item 191)*

Schwedt (Expert, organisation of MTU Cup): *[...] "New since 2024 is the implementation of a livestream via Sportdeutschland.tv. I also coordinate audio in the hall, including music, videos, and interviews". (Questionnaire, p. 12, item 94)*

Jakic (Expert, organisation of MTU Cup): *The MTU Cup is organized on a voluntary basis, I have been included in the creation of digital content such as a YouTube video from 2017 that reached 14 million views. Despite having a marketing budget of zero euros, the tournament achieves impressive reach through a sponsored website and volunteer operated social media channels."(Questionnaire, p. 13, item 99)*

The wide range of specific measures mentioned by the experts impressively demonstrates how digital innovations are already being successfully implemented at the MTU Cup despite limited resources. Nikic describes how goal replays on video walls, a dedicated app and fan cameras would enhance the event both on site and digitally. Schwedt points to the introduction of live streaming via Sportdeutschland.tv, which makes the tournament experience accessible to fans and families who are unable to attend in person. Jakic emphasises that even without a marketing

budget, creative social media strategies and a viral YouTube video with over 14 million views have achieved remarkable reach. In youth football in particular, such measures can strengthen fan loyalty and a sense of community if they are tailored to the needs of the target groups. This is also emphasised by Xiao (2017), who highlights the role of digital technologies in improving fan interaction and audience loyalty. At the same time, Harwardt & Schmutte (2022) emphasise that the introduction of new technologies requires a rethink and flexible adaptation at all levels. Experts see further potential in features such as cashless payment, online ticketing, interactive Q&A sessions and additional camera angles, which could make the fan experience even more individual and modern. The fan engagement model developed by Yoshida et al. (2014) not only provides the theoretical basis for analysing fan loyalty but also shows how digital measures can strengthen identification with the event.

Category: Future

The category 'Future' brings together the ideas of the experts, technological trends and innovative ideas for further developing the digital fan experience at the MTU Cup. It was created to highlight new digital innovations that have been mentioned. It should be noted that the statements in this category do not only refer to current proposals, but above all to future developments, particularly with a view to the next five years. The category focuses on novel, as yet largely unestablished digital innovations. It serves to capture visionary approaches in a structured manner and make them available as a basis for future development opportunities.

Anchoring examples:

Segelbacher (Expert, organisation of MTU Cup): *“First, mini cameras integrated directly into the players' jerseys would allow fans to experience the game live from the perspective of their favourite player, creating an entirely new level of closeness and emotion. Second, an interactive fan zone with VR headsets would let spectators stand virtually on the edge of the pitch and follow game scenes from various perspectives, enhancing the feeling of truly being part of the action. Third, “feel the game” seats connected to sensors on the field would transmit vibrations and movements during goals, tackles, or fouls in real time, allowing spectators not only to see the action but to physically feel it”.* (Questionnaire, p. 31/32, item 237)

Savic (Expert, organisation of MTU Cup): *“I would use drones flying above the pitch, equipped with special cameras to film the game from every angle. The footage would be streamed live on multiple platforms to reach as many viewers as possible. At the same time, the videos would be sent in real time to an AI system that analyses them immediately. This way, player data such as running paths, passes, and duels could be captured and published in an app within*

seconds. The footage would also be automatically edited so that key moments are quickly accessible ideal for fans, coaches, and players. Coaches would also receive specific analytics to better adjust and improve their teams". (Questionnaire, p.32, item 238)

Brosamer (Expert, participating Youth Team): [...] *"I would experiment with a smart ball equipped with internal cameras and sensors that capture in game footage and provide insights into ball speed, spin, and pass accuracy adding both excitement and analysis value". (Questionnaire, p.33, item 246)*

Heseltine (Expert, participating Youth Team): [...] *"Additionally, I would launch a VR-based tactical zone, where young fans can step into the shoes of a coach and make real-time decisions during simulated game scenarios, learning through gamification. To bring fans even closer to the game, I would also test jersey mounted micro cameras that stream action from a player's perspective, offering unique behind-the-scenes content from the field". (Questionnaire, p.33, item 247)*

Unsworth (Expert, participating Youth Team): [...] *"I'd add motion-tracking zones around the pitch that let fans view slow-motion replays from 360 degrees, similar to the Premier League's "Match Zone". (Questionnaire, p.33, item 248)*

Playa (Expert, participating Youth Team): [...] *"As a next-level idea, I'd install player positioning sensors under the turf, allowing fans to replay entire game sequences with animated overlays that visualize player movements, heat maps, and key plays". (Questionnaire, p.34, item 249)*

The ideas for the future developed by the experts show how much technological innovations could change the fan experience at the MTU Cup in the upcoming years. Segelbacher mentions a forward-looking idea that mini cameras could be integrated directly into the players jerseys. Fans will be able to experience the game live from the perspective of their favourite player, creating an unprecedented level of emotional closeness. He also highlights the vision of an interactive fan zone with VR glasses, where spectators can stand virtually on the sidelines and watch game scenes from different angles, which would greatly enhance the feeling of really being part of the action. The idea of 'Feel the game' seats, which are connected to the pitch via sensors and transmit vibrations or movements directly to the fans when goals are scored or fouls are committed, opens up a new dimension of immersion. Savic adds to these approaches by suggesting the use of drones with special cameras that film the game from all angles and stream the footage in real time to various platforms. At the same time, these video images could be analysed by AI to immediately evaluate running paths, passes and tackles and provide them as highlight clips or live statistics in an app. Brosamer adds to this vision with the idea of a smart ball that uses integrated cameras and sensors to provide data such as ball speed, spin and pass accuracy. Heseltine proposes a VR-based tactics zone where young fans can slip into the role

of a coach and make tactical decisions in a playful way, which could promote interest and willingness to learn through gamification. Unsworth suggests installing motion tracking zones around the pitch that enable 360-degree slow motion replays, creating an experience reminiscent of the Premier League's 'Match Zone'. Playa goes one step further and proposes position sensors under the turf that allow fans to follow entire plays with animated overlays, heat maps and key scenes. These visions pick up on trends and best practices from professional sports, such as those already established in Formula 1 with the F1 TV Pro service or in the NBA with the Virtual Courtside Experience (Schmidt, 2024; Erl, 2024). The literature also confirms that immersive technologies such as VR, AR, drone footage and real-time data can significantly increase not only emotional identification but also fan engagement and loyalty (Cappemini, 2020; Koch & Müller, 2022). The experts make it clear that many of these technologies still seem visionary today but could become reality in youth football in the next few years, provided that the resources and openness to new ideas are available. It will be crucial that, despite all the innovation, the values of the MTU Cup, such as community, accessibility and enjoyment of sport, which are particularly important to the main organiser Segelbacher, are preserved.

4.2 Discussion

The detailed results clearly demonstrate that digital innovations can greatly improve the fan experience at the MTU Cup. This necessitates that they are customized to the particular circumstances of the tournament. A significant discovery is that innovations must be compatible not just with technical feasibility but also with the resources and values of youth football. In the case study presented in this dissertation, community, accessibility and authenticity play a central role. The models presented in the theoretical part, in particular the fan engagement model by Yoshida et al. (2014), prove to be applicable in youth football. Compared to professional sports, the MTU Cup faces particular challenges due to its reliance on volunteers and limited financial resources, which require innovative and pragmatic solutions. While the

examples show that creativity and commitment can achieve a great deal, long-term successful innovations require targeted investment and strategic prioritisation. Nevertheless, it is worth thinking these ideas through and exploring opportunities for external funding or partnerships with larger sponsors and technology partners. With careful implementation, the MTU Cup could position itself as a pioneer in digital fan experience in youth football in the long term. While best practices from professional sports provide valuable inspiration, the transfer to youth football is constrained by structural and resource-related factors. Studies such as those by Capgemini (2020), Koch & Müller (2022) and Gao et al. (2024) confirm that digital technologies can strengthen emotional ties and interaction with fans but also emphasise the need to adapt innovations to the respective target groups and resources. It is also clear that the perspectives of fans, parents and young people themselves should be considered more in future studies in order to better understand the acceptance and impact of digital measures. Overall, the digital development of the MTU Cup exemplifies the tension between visionary possibilities and real-world conditions in youth football.

5 Conclusion & Recommendations

5.1 Recommendations

In the international sports market, it is particularly important to seek strategic partnerships. Sponsors such as Adidas or Nike could not only provide financial resources, but also technical expertise, innovative technologies and increased international visibility. For cost-intensive projects such as VR fan zones, AI-supported game analysis or fan wristbands, such cooperation would be a decisive step towards turning the vision into reality. In addition, it is advisable to carry out pilot projects for selected future visions. These include the examples mentioned by the experts: mini cameras in jerseys, smart sensor balls and motion tracking zones. These innovations still seem visionary today but could be made feasible with technical support and targeted sponsorship. In collaboration with a technology company or university,

such concepts could initially be tested on a small scale and gradually expanded if successful. Another important step is the development of an MTU Cup app, which should no longer be seen as an innovation, but as a basic digital requirement in the event sector. Such an app should bundle central functions such as match schedules, live tickers, push notifications and fan voting, thereby improving orientation on site and strengthening digital interaction and loyalty. In addition, the existing live stream should be expanded and supplemented with additional perspectives via GoPros or drones. A parallel stream via the MTU Cup app and platforms such as YouTube or Twitch could further improve reach and accessibility. This would be particularly beneficial for international teams and their families. In the long term, it would make sense to establish a continuous innovation process in which new technological developments are regularly reviewed for their relevance to the MTU Cup. A small innovation team or an advisory board with external consultants could be set up for this purpose to keep the organisation future-proof and enable it to respond flexibly to new trends. Finally, all measures should ensure that digital innovations always support the values of the MTU Cup and do not replace them.

5.2 Study Limitations

Despite the comprehensive qualitative analysis of digital innovations aimed at improving the fan experience at the MTU Cup, there are some limitations that affect the interpretation and generalizability of the results. The study is based on a limited number of expert interviews (15), which provide valuable insights. However, the interviews only represent a snapshot of current assessments and ideas. Another methodological aspect is that the results are strongly related to the MTU Cup. It should also be noted that digital innovations are subject to rapid change. Since the data collection is based on the personal assessments and enthusiasm of the experts interviewed, there is also the possibility of a certain degree of subjectivity in the evaluation of innovation potential. It should also be emphasized that the field of youth football and digital innovations has been little researched scientifically to date. This work therefore

makes an initial contribution but also opens up numerous follow-up questions and areas for further research. For future research, it would be useful to use quantitative methods and specifically survey other target groups such as fans, parents or even the participating players themselves. A larger and more heterogeneous sample could help to capture the acceptance, use and impact of digital innovations more comprehensively and from different perspectives. In addition, comparative studies with other youth tournaments or sports could help identify general success factors and challenges for digital fan interaction. In this way, research can make a more comprehensive and practical contribution to how digital innovations can improve the fan experience in youth football in the long term.

5.3 Conclusion

This qualitative research focused on the question of how digital innovations can specifically improve the fan experience at the MTU Cup. This makes it clear that the digital innovations mentioned represent new ideas and are a key tool for enriching the experience for fans, both on site and worldwide, and for positioning the MTU Cup for the future. They open up new ways of engaging fans, create space for creative experiences and offer the MTU Cup the opportunity to position itself as a future-oriented role model in an international comparison. At the same time, it became clear that sustainable innovations can only succeed if they consider the specific culture, resources and needs of all those involved. This work opens up a previously little-researched field and contributes to the further development of the digital fan experience in youth football. The findings can serve as guidance for organisers, clubs and developers to use digital measures in a targeted, responsible and effective manner. Ultimately, the study shows that the courage to innovate and the willingness to break new ground are crucial to how attractive, vibrant and community-building youth football can be experienced in an increasingly digital world.

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Interview guide - Master's thesis Nina Sophie Segelbacher

Title:

Digital Innovation in Youth Football: Enhancing the Fan Experience at the MTU-Cup

Research question:

How can digital innovations enhance the fan experience at the MTU Cup?

Brief explanation and agreement before the interview with the experts:

Go through the key points for approx. 5 minutes, they serve as points of reference so that the most important points can be clarified in advance and the participants know what it is about)

<p>Introduction to the conversation</p>	<p>Brief introduction:</p> <ul style="list-style-type: none">- Degree programme, university, location, master's thesis, about myself <p>Topic:</p> <ul style="list-style-type: none">- Topic of the thesis, relevance of the topic, personal connection <p>Use and evaluation:</p> <ul style="list-style-type: none">- The interview will be recorded for evaluation purposes- Information will be treated confidentially, and statements will be anonymised if necessary <p>Procedure:</p> <ul style="list-style-type: none">- Ask if there are any questions before starting the interview- Express gratitude to the interviewee for taking the time- Inform the interviewee that the recording is starting- 16 questions- Interview (approx. 30-45 minutes), depending on the flow of the conversation
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Goodbye Interview	<p data-bbox="423 195 493 222">after</p> <p data-bbox="516 195 781 222">Acknowledgement:</p> <ul data-bbox="565 268 1344 338" style="list-style-type: none">- Take approx. 5 minutes- Thank you very much, Mr/Ms XY, for your participation <p data-bbox="516 380 656 407">Questions</p> <ul data-bbox="565 453 1377 554" style="list-style-type: none">- Are there any questions? If you have any questions or suggestions after the interview, please feel free to contact me. <p data-bbox="516 600 630 627">General</p> <ul data-bbox="565 674 1377 743" style="list-style-type: none">- Once the master's thesis has been completed, a short summary of the results can be provided on request. <p data-bbox="516 789 597 816">Legal</p> <ul data-bbox="565 863 1377 1037" style="list-style-type: none">- Legal confirmation that I am permitted to record the interview and that all participants agree to this (mention again that all data will be anonymised if desired and no names will be published). If the participant does not mind, their name will be mentioned.
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Questionnaire Expert Interview

Cluster	Key questions
<p>A: Perception & status quo of digitalization and fan experience in the sports context</p>	<ol style="list-style-type: none"> 1. What role do digital innovations play for you? 2. How would you assess the current state of digital innovations in the area of fan experience in sports in general? 3. What significant changes have you observed in this area in recent years? 4. What specific elements do you think define a successful fan experience in youth football? <p>➔ To what extent do the requirements of youth sports events differ from those in professional sports?</p>
<p>B: Potential of digital innovations for fan experience & engagement using the example of the MTU Cup (TU Cup potentials & target group needs)</p>	<ol style="list-style-type: none"> 5. How are you involved in the MTU Cup and how do you experience the tournament from your perspective? 6. What digital innovations have you already observed at the MTU Cup? <p>➔ Which digital innovations at the MTU-Cup stood out to you positively or negatively?</p> <ol style="list-style-type: none"> 7. What successful examples of digital fan experience solutions from professional sport could serve as inspiration for the MTU Cup? 8. How could digital innovations be used to promote interaction

	<p>between fans, players and the event team at the MTU Cup?</p> <p>→ What role do social media and mobile applications play in this context?</p> <p>9. Which of the following technologies do you think is particularly promising for the MTU Cup? (Examples for inspiration: mobile apps, social media integration, live streaming, virtual reality, cameras)</p>
<p>C: Challenges, limits, implementation ideas & future (implementation barriers & future strategies)</p>	<p>10. In your opinion, what would be a realistic first step toward implementing digital innovations at the MTU-Cup? (Can you give an example)</p> <p>11. When you think of other industries, what innovative approaches to audience engagement could be transferred to the sports sector?</p> <p>12. If you had an unlimited budget at MTU-Cup, which digital ideas would you implement immediately?</p> <p>13. Which target groups might face difficulties using digital offerings?</p> <p>14. What obstacles do you see in the implementation of digital</p>

	<p>technologies or innovations in youth football or at the MTU-Cup?</p> <p>15. What is your vision for the future of digital fan experience at youth sporting events over the next five years?</p> <p>16. Are there any other aspects regarding digital innovations and fan experience that you would like to add, either in relation to the MTU-Cup or in general, that we haven't covered yet but you consider important?</p>
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Transcript of the expert interviews

Enhancing the fan experience at the MTU Cup

REDUCED VERSION:

Duration: 30-50 minutes

Dates: 1 April to 29 April 2025

Start of recording:

Cluster A: Perception & Current Status of Digital Innovations and Fan Experience in the Sports Context

1. What role do digital innovations play for you?

Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):

Segelbacher: ~~Personally, I'm hardly active on social media myself. However, for the younger generation, it's an absolute must, as they grow up with social media as a natural part of their lives.~~

Opportunities

Musso: Digital innovations play a key role in enhancing the fan experience, encouraging interaction, and reaching new audiences. They enable sports events to become more modern, interactive, and accessible.

Savic: ~~Digital innovations are very important to me, as they have transformed the world in many ways and significantly simplified everyday life. I believe digital technologies should be implemented and utilized wherever possible. Everyone should have the opportunity to develop and realize their own ideas to help drive innovation forward.~~

Schwedt: ~~In an increasingly digital world, innovation is essential. It is the only way to drive progress, and with creativity, it can also create a competitive edge.~~

Implementation

Opportunities

Röhm: As part of the social media team, digital innovations are essential for me to communicate content in a way that is targeted, creative, and up to date. They open up new ways to

Opportunities

emotionally connect with fans, engage with them, and extend the event experience through digital channels.

15 **Müller:** ~~Since I get most of my daily information via social media or other digital platforms, genuine digital innovations are a refreshing and relatively easy to access source. They tend to attract more attention than traditional written content.~~

16 **Nikic:** ~~In today's world, digital innovations and technologies have become almost indispensable and they now play a major role in my personal and professional life.~~

Opportunities

Implementation

17 **Jakic:** Digital innovations serve as an efficient tool to generate attention among a broad audience and to build long term engagement. In the context of a youth football tournament like the MTU-Cup, which operates with a minimal marketing budget, they function as a cost effective interface to emotionally and interactively involve fans, especially young viewers. The focus lies on increasing the visibility of talents through channels like social media or live streams without overloading the tournament's organizational capacities.

18 **Experts of Participating Youth Teams:**

Contextual Foundations

Future

19 **Brosamer:** Digital innovations play an increasingly important role. While social media has already initiated many developments, technologies such as virtual reality will gain even more significance in the future. ~~In countries like Asia and the United States, these trends are already being strongly driven forward.~~

20 **Heseltine:** ~~I work within football so having help with my day-to-day jobs such as AI has helped me massively.~~

21 **Unsworth:** ~~Digital innovation does not affect my current role. However, I have seen it being used at various tournaments I have attended and at football league matches.~~

Opportunities

22 **Playa:** Digital innovations are an increasingly essential element of modern sports experiences. They have the power to enhance fan engagement, streamline operations, and create more inclusive, exciting, and immersive environments. For me, they represent not just a trend, but a valuable tool that, when used creatively, can bring people closer to the sport and foster a deeper emotional connection to teams and events.

Opportunities

23 **Jamet:** Digital innovation can simplify everyday processes

Opportunities
Challenges

Opportunities

Opportunities

and make experiences more immersive and emotionally engaging. It can enhance the fan experience by offering more entertainment, helping fans get to know players better, and speeding up services like food and drink orders. However, it is important to be cautious of potential misuse if not properly managed.

24 **Ryan:** They are a way for fans and spectators to interact and enjoy the experience more. It creates a special atmosphere and provides the spectators the chance to feel part of the game and bring a personalised experience which should ensure they return to experience it again.

25 **Uygur:** Digital innovations play a very important role in optimizing processes, improving decision making, and strengthening communication between event organizers and teams.

26 **2. How would you assess the current state of digital innovations in the area of fan experience in sports in general?**

27 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

Contextual Foundations
Opportunities
Challenges

Opportunities

Challenges
Opportunities

28 **Segelbacher:** ~~Since virtually 99 percent of people own a smartphone, every club, regardless of the sport, is trying to reach its fans through social media. Of course, this depends on the club's budget and how many people are assigned to this area. Major professional clubs have entire departments dedicated to fan experience. The development over the past ten years has been enormous and will continue to grow.~~ Even within our own organization, we can feel how digital innovations are becoming increasingly important. In the past, a simple website may have been enough, but today, fans expect livestreams, up-to-date content on social media, and opportunities to engage directly with the tournament experience. Even smaller events need to adapt if they want to remain attractive in the long term.

29 **Savic:** I believe there is still a lot of untapped potential when it comes to digital innovations, especially in youth football. ~~In professional football, many technologies are already in use, such as video analysis or data tracking tools to measure performance and gameplay. Still, even there, there is room for further development.~~ In youth football, on the other hand, digital technologies are barely used. Especially at

Opportunities

Contextual Foundations

Future

Contextual Foundations

Opportunities

Challenges

Contextual Foundations

Opportunities

Contextual Foundations

Challenges

Implementation

Opportunities

tournaments, I would love to see more use of images and video footage. This would not only improve the fan experience but also help players and coaches analyze matches and grow, moving a step closer to more professional structures.

30

Schwedt: There has been continuous development already offering many possibilities, such as information platforms or live tickers for scores. Streaming across different devices with access anytime and anywhere is now common. I believe there is still significant development potential. ~~In addition, user behavior is shifting from the classic sports show on television at six p.m. on Saturdays to video on demand and pay per view formats.~~

31

Röhm: In professional sports, the topic is already handled very professionally, with interactive platforms, real time content, and data driven storytelling. In the youth sector, things are often not that advanced yet, but I see great potential here to achieve a big impact with relatively little effort.

32

Müller: ~~I believe that professional teams are already well positioned in this area, often hiring mostly young people to develop innovative products that reach their fans.~~ Amateur sports, however, still depend on whether people in their environment are actively working on these topics. There is definitely room for improvement here.

33

Musso: The current state is promising, particularly in professional sports, where technologies like augmented reality, AI powered analytics, and interactive apps are already widely used. In youth and amateur sports, however, there is still a great deal of potential for innovation.

34

Nikic: ~~I would consider the current state of digital innovation in fan experience, at least in professional sports, as already very advanced and highly developed.~~

35

Jakic: The current state of digital innovation in sports shows great potential but is highly dependent on financial resources. In professional sports, personalized fan apps like OneFootball or kicker are used, offering live statistics and player tracking, as well as AI generated highlight videos. In youth football, however, personalization remains underdeveloped. Content is often generic, and obstacles like advertising banners or cookie notifications reduce user friendliness. The app fussball.de is an exception, providing personalized results and updates in the German speaking region. Internationally, there is still untapped potential,

Opportunities

especially through social media platforms like TikTok, Instagram, and YouTube, which offer viral reach.

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Experts of Participating Youth Teams:

Future

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Brosamer: ~~I find digital innovations in the sports sector very exciting.~~ They will play an increasingly important role in the future, both in communication and in the fan experience.

Future

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Heseltine: ~~The current level is basic but effective.~~ However, I believe with the use of AI, graphics, and animations it will become a lot more accessible for fans and spectators and help with individual fan experience.

Contextual Foundations

Future

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Unsworth: I think there are a few things in place already such as Live Streaming and some use of AR. I think there is a long way to go but the foundations are there.

Challenges

Opportunities

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Playa: Digital innovation in sport has made great strides, but there is still a gap between what is technically possible and what is actually implemented. In youth football, in particular, digital tools could be used more effectively to strengthen communication, improve data analysis, and engage fans, without losing the human and emotional side of the game.

Contextual Foundations

Future

Challenges

Opportunities

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Jamet: Digital innovation has already had a huge impact on professional sports. Youth football is starting to follow suit, but there is still a long way to go. While some tools like performance tracking or match recording exist, they are often only used at higher levels or in special events. There is definitely potential for wider application.

Challenges

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Ryan: ~~I think in professional sport digital innovation is progressing fast and is of a very high level.~~ In youth sport it is improving slowly but it is not a high priority for most youth organisations or events unless it brings immediate results like views or revenue.

Opportunities

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Uygur: Where static data already played an important role in sports, AI has significantly raised the level of digital innovation and its impact.

44

3. What significant changes have you observed in this area in recent years?

45

Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):

46

Segelbacher: In German clubs, there has been a significant increase in budgets for this area, and many young people have been hired. Why? Because many innovative ideas are often tested and launched first in the American leagues, which are absolute pioneers when it comes to fan experience. Little by little, many of these ideas then make their way from the United States to European clubs.

47

Savic: In professional football, a lot has changed in recent years, from sophisticated video analysis to digital fan offerings. In youth football, however, innovations are usually limited to simple video recordings. There is still a lot of room for improvement.

Challenges

48

Schwedt: Digital services such as live tickers, streams, and betting options are now also being made available for lower leagues or lesser known sports events. The use of these offerings is much more natural for younger generations. For example, a football match is no longer necessarily watched on the TV at home, but streamed live on a mobile phone in a beer garden or viewed later on demand. The use of digital transmission technology is becoming more user friendly. An outside broadcast van with satellite connection is no longer required. A basic internet connection via mobile network and minimal equipment is sufficient. Smartphones alone already offer top quality for streaming today.

Implementation

Contextual Foundations

Implementation

Implementation

49

Röhm: Fans' expectations have changed. They want to be more directly involved, get real behind the scenes insights, and feel part of the event even if they are not on site. Reels, livestreams, and story formats have become the norm. The speed at which content is published is also a key factor.

Contextual Foundations

Implementation

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Müller: There is now much more video content being produced than simple images and text. Innovative digital formats definitely have a fast and direct impact.

Implementation

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Musso: The use of AI to create highlight videos, the integration of social media for live updates and fan interaction, as well as advancements in virtual reality and augmented reality are all contributing to immersive experiences.

Opportunities

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Nikic: When you think about real time statistics like measured sprint speed, distance covered, or the expected goals value, these are already major changes. Even body

Contextual Foundations

cams on referees are part of this transformation. For me personally, these are significant developments.

53 **Jakic:** The most important shift has been the transition from offline to online media. Whereas in the past local newspapers were the main source for youth football results, the app fussball.de has now taken over that role. Even more important is the growing significance of social media. Individual youth players can now gain global attention through viral videos, such as an MTU Cup clip from 2017 that reached 14 million views. This development has made youth football more attractive, as talent can now be seen worldwide. In terms of viewer interest, male youth football is positioned directly behind professional football, which highlights the vast but still underused potential in this area.

54 **Experts of Participating Youth Teams:**

55 **Brosamer:** One major change is the instant access to information. Match statistics and highlight videos are available during the game, which enables faster communication and more targeted analysis.

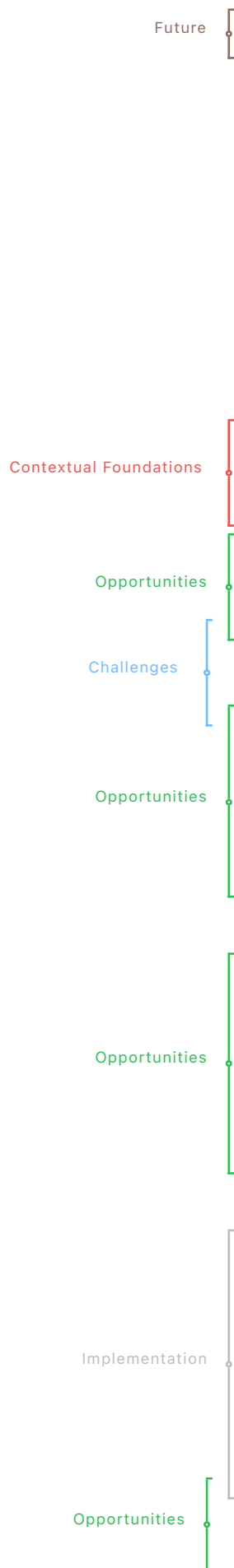
56 **Heseltine:** Communication between staff is easier and match footage can be reviewed and coded live for training and development purposes.

57 **Unsworth:** Live footage being available to those not attending and the ability to analyse training and match performance more quickly and efficiently.

58 **Playa:** The biggest change I have noticed is the availability of data and live information. Whether it is match statistics, biometric data, or tactical analysis, everything can now be accessed and shared in real time. This allows coaches, analysts, and even fans to engage with the game in new and meaningful ways.

59 **Jamet:** Immediate access to videos and stats has changed how teams prepare and reflect. For fans, it's the ability to see goals, actions, or replays instantly on screens or mobile devices. It brings the experience closer to them and keeps the excitement going beyond the field.

60 **Ryan:** Being able to stream and watch games back and analyse performances. Also being able to communicate and send videos instantly to families or other clubs to showcase a player.



61 **Uygur:** New technologies have created more and more opportunities to observe, analyze, and learn.

62 **4. What specific elements do you think define a successful fan experience in youth football?**

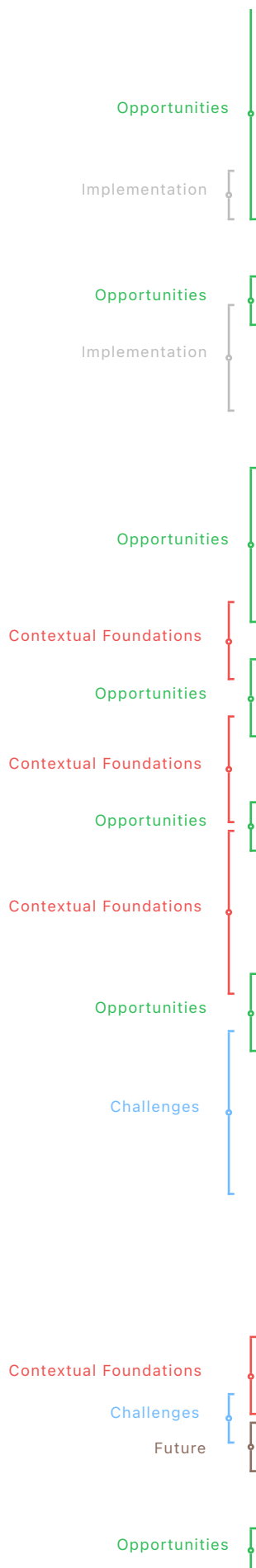
63 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

64 **Segelbacher:** The most important thing is the sport itself and what actually happens on the field -> goals, goals, and great moments of play. Everything that takes place before and after a match is what we call the fan experience. Whether through a smartphone or live at the stadium, fans are engaged through various activities, such as fan zones in the Bundesliga that encourage them to participate and have fun. However, this is only possible in professional leagues, where financial resources are available. At junior events, most things are organized on a voluntary basis, and finding volunteers is becoming increasingly difficult. In youth football, interactive activities around the match would be highly desirable, such as football darts, goal wall shooting, or engaging fans via social media before an event. Competitions or actions like voting for the most valuable player, goal of the day, or best save of the day by a goalkeeper could be very effective.

65 **Savic:** For me, detailed player statistics such as pass accuracy, completed passes, and duels won are an important part of a successful fan experience, especially in youth football. In professional football, these types of statistics have long been standard, but in youth football they are still largely missing. They would not only better engage the spectators but also help players improve their performance in a targeted way.

66 **Schwedt:** Fundamentally, all offerings must be tailored to the target audience. What kind of content is interesting, and what is the intended goal? Is it promoting a product, an event, or the club itself? The communication should be designed in a way that is entertaining and encourages people to return to the platform again and again.

67 **Röhm:** From a social media perspective, what matters is regular, emotional, and authentic content. This could include player interviews, behind the scenes moments, reactions from fans and parents, as well as interactive formats such as



polls or live question and answer sessions. Highlight videos and well designed matchday posts also contribute significantly to building fan loyalty.

68 **Müller:** I am particularly interested in match scenes, interviews, and short but meaningful reels. They should be concise but rich in content.

69 **Musso:** A successful fan experience in youth football should be interactive, family friendly, and inspiring. This could include live streaming of matches, interactive apps with games and challenges, and opportunities for direct interaction with players and coaches.

70 **Nikic:** I would find live streaming or at least a live ticker in youth football very appealing.

71 **Jakic:** A successful fan experience in youth football focuses on visibility and identification with individual talents. Fans, especially young viewers, are primarily interested in potential future stars. Key elements include highlight videos, background stories about players, their development and skills, and interactive formats such as social media voting. In contrast to professional football, where identification is usually with a team, in youth football the team affiliation is secondary. The excitement is about the individual player's abilities and journey, regardless of the team. The requirements are different in several ways. The target group of youth football includes families, such as parents and siblings, who expect free and simple services, while fans of professional sports are often willing to pay for premium content. Youth football emphasizes values like fairness and talent development, which should be reflected in digital tools, for example through fair play badges. Resources are limited in youth tournaments such as the MTU Cup, unlike the multimillion marketing budgets of professional sports. The target group in youth football, such as parents and grandparents, is often less tech savvy, so intuitive solutions are essential.

72 **Experts of Participating Youth Teams:**

73 **Brosamer:** Youth football shares many of the same goals as professional sports, especially when it comes to engaging fans. However, the amount of information available is more limited and resources are often scarcer. Still, professional standards should also be pursued in youth events.

74 **Heseltine:** Being able to see the match clearly, being able



to interact and feel part of the experience. Merchandise and food options being simple and easy to access.

75 **Unsworth:** The audience and demands are different. Youth football is often more family oriented, and the level of data and media coverage is naturally lower. It is more about supporting development than entertainment.

76 **Playa:** A successful fan experience at youth level should focus on inclusivity, accessibility, and emotional connection. It's not about big shows or complex features, but about making families and young fans feel welcome and engaged through simple tools like live scores, team introductions, and basic interactivity.

77 **Jamet:** In professional football, innovation often serves entertainment and revenue. In youth football, it should support development, education, and participation. The tools must be easier to use and not distract from the actual sporting goals.

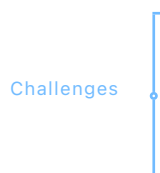
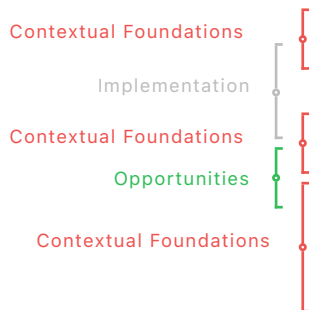
78 **Ryan:** In professional sport the focus is on engagement, revenue, and branding. In youth sport it should be more about fun, involvement, and development. The tools need to be simple and easy to use so that anyone can benefit from them, not just tech-savvy users.

79 **Uygur:** A successful fan experience in youth football includes emotional support, atmosphere, interaction and inclusion, and the tournament as an overall memorable event. Compared to professional sports, youth events rely heavily on volunteer organization, have limited budgets, and require improvisation and creativity. There is also a special focus on working with children and young people, as well as on data protection.

80 *Follow-up question:*
To what extent do the requirements of youth sports events differ from those in professional sports?

81 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

82 **Savic:** In professional sports, there is a wide range of



detailed player data and extensive video material that is used both for analysis and enhancing the fan experience. In youth football, however, such data is largely missing, and video recordings are far less common. This significantly limits opportunities for development and fan engagement.

83 **Schwedt:** The key difference is the target group. At youth events, it is essential to also involve the parents. This means that offerings must be appealing to both the young participants and their parents. Youth events are usually more regional in nature and have a smaller overall reach. This can be both an advantage and a disadvantage. The goal should be to highlight and make use of the regional strengths. Professional sports have a much broader reach and a clearly defined fan base that can be addressed in a targeted way.

84 **Röhm:** In youth sports, the focus is much more on closeness, personality, and a family atmosphere. Content often needs to be produced more quickly and with limited resources. At the same time, expectations regarding quality are still high, especially among younger audiences who are used to platforms like TikTok and Instagram.

85 **Müller:** I would say that youth sports still come across as more authentic. In professional sports, athletes are often told by their clubs what they can and cannot do. Also, identification with young athletes is usually stronger than with adults.

86 **Musso:** In youth sports, the focus is more on family and community. The technologies used should be easy to handle and provide value for parents, children, and coaches. In contrast, professional sports are more focused on entertainment and commercial aspects.

87 **Nikic:** ~~I have no specific idea to add here.~~

88 **Jakic:** ~~Already explained in my previous response.~~

89 **Cluster B: Potential of Digital Innovations for Fan Experience & Engagement Using the Example of the MTU-Cup**

90 **5. How are you involved in the MTU-Cup, and how do you experience the tournament from your perspective?**

Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):

Contextual Foundations

Contextual Foundations

Opportunities

Future

Contextual Foundations

Contextual Foundations

Opportunities

Implementation

Contextual Foundations

Implementation

92

Segelbacher: ~~I have been organizing the MTU Cup for 23 years now. I founded the tournament myself back then as a small one-day event for mini teams.~~ Over the years, the MTU Cup has developed into one of the most renowned under 15 indoor tournaments in the world, as many coaches who return each year have confirmed. In 2024, we were able to welcome teams from five different continents for the first time, which marked a huge milestone for us. ~~As the main organizer, I unfortunately get to see very little of the actual games.~~ While the spectators enjoy the matches, countless organizational processes take place behind the scenes, including support for international teams, coordination with sponsors and partners, management of the overall tournament flow, and solving both small and large challenges that arise spontaneously. My focus is on creating a smooth and unforgettable experience for players, coaches, fans, and partners alike. What many people may not realize is that as soon as the tournament ends and the last players leave the venue, planning for the next year already begins. It is a cycle of anticipation, improvement, and the ongoing goal of making the event even better. Despite all the effort, it is an incredible feeling each year to see how the MTU Cup has grown and what it now represents on an international level. I am proud to have accompanied and shaped this journey from the very beginning.

93

Savic: I attend the MTU Cup as a spectator and also as a Coach for VfB Friedrichshafen (Leistungszentrum). From my point of view, it would be highly beneficial to have more player data available, such as running paths, passes, and duels. More detailed video footage from multiple camera angles would also significantly enhance the experience and make it easier to follow key moments of the game.

94

Schwedt: My role involves organizing and managing the advertisements and media on the video walls in the arena. New since 2024 is the implementation of a livestream via Sportdeutschland.tv. I also coordinate audio in the hall, including music, videos, and interviews. I experience the event as a highly professional tournament with a strong local charm. Guests stay with host families, most sponsors are local, and the event has now become internationally established with changing teams and growing interest. It is an event at an extremely high level, both in preparation and execution.

95

Röhm: I am part of the social media team and support the tournament communication before, during, and after the

Implementation
Opportunities

event. In my view, the MTU Cup is a great platform to create emotional and dynamic content that reflects the spirit of youth football and actively involves the community.

Contextual Foundations

96 **Müller:** As one of the two heads of the organizing football department, I am mainly involved in the operational side of the tournament, during the days before, during, and after the event. I have been part of the tournament for 20 years and am impressed by how the MTU Cup has developed from a local competition into the largest indoor under 15 tournaments in the world.

Contextual Foundations

Opportunities

97 **Musso:** I am part of the main organizing team of the MTU Cup. Before the tournament, I am responsible for planning team transportation and coordinating the work schedules of parents in catering, security, and VIP catering. Thanks to my long experience with the tournament, I have had the opportunity to personally support major Italian clubs such as AC Milan and Juventus. For me, the tournament not only offers organizational challenges but is also a great personal enrichment through the contact with international teams and their fans.

Contextual Foundations

98 **Nikic:** I am involved in the MTU Cup as a coach of the MTU Talent Center and as an active helper in many areas. I have attended several indoor Bundesliga and international youth tournaments and must say that the MTU Cup is one of a kind. The location, the participating teams, and the organization are all outstanding.

Implementation

Challenges

Opportunities

Challenges

99 **Jakic:** The MTU Cup is organized on a voluntary basis, I have been included in the creation of digital content such as a YouTube video from 2017 that reached 14 million views. Despite having a marketing budget of zero euros, the tournament achieves impressive reach through a sponsored website and volunteer operated social media channels. The challenge lies in maintaining year round attention, as the tournament only takes place once a year. With a budget of 20000 to 50000 euros, professionally produced highlight videos of players could significantly increase global visibility. At the moment, content is often randomly picked up by private users or international media, which shows the enormous potential of the tournament but also highlights the need for a more structured approach.

100

Experts of Participating Youth Teams:

Implementation

101

Brosamer: As the person responsible for international sports development at VfB Stuttgart, I support international teams participating in the MTU Cup by organizing additional

Implementation
Opportunities

training and match opportunities during their stay. I also look into how digital technologies and innovations can help document training sessions, support international exchange, and prepare content tailored to different audiences.

Contextual Foundations

102

Heseltine: I am working as a Analyst an ManUnited It's well organised and a good experience for all of our players. It is very competitive and allows for international interaction which is great for young people and developing teams. In my role as a performance analyst at ManUnited, I rely heavily on digital tools to break down match footage, track player movement, and support tactical decision making during the tournament.

Implementation

Contextual Foundations

103

Unsworth: As a team manager, I help coordinate logistics and communication for the Manchester United group. The tournament is busy but enjoyable. It's a great chance for players to experience international football in a professional setting. Within logistics and communication, I regularly use digital planning tools and messaging platforms to streamline coordination and ensure that our schedules, transport, and matchday routines run smoothly.

Implementation

Contextual Foundations

104

Playa: I am part of the delegation that travels with our youth team (FC Barcelona) to the MTU Cup. From my perspective, it is a fantastic opportunity to see how different clubs operate and to connect with coaches, organisers, and fans from other countries. The atmosphere is intense but also very welcoming. Throughout the event, I use digital systems to manage internal communications and support social media content, allowing us to document and share key moments with our fanbase.

Implementation

Contextual Foundations

105

Jamet: I attend as part of the staff team supporting our players. My Team is Olympique Marseille. The event is high energy and very well structured. It gives me the chance to see upcoming talent and how youth football is being promoted on an international level. As part of my work, I use data tools and video analysis software to monitor performances, prepare feedback, and identify areas for improvement in real time.

Implementation

Contextual Foundations

106

Ryan: At the Moment I am U17 National Head Coach for the national Team of England and before I have been working for less than 20 years for ManUnited, that's why I attended MTU-Cup for several tims. As a ex coach for the U15 Team of Manchester United I see the MTU Cup as a top international tournament that allows our team to compete and learn. The level is high, and we are proud to be invited. I enjoy the cultural experience and seeing how different teams prepare and play. During the tournament, I use digital scouting tools

Implementation

Implementation

Contextual Foundations

and match footage to review performances and plan tactical adjustments for the next games.

107 **Uygur:** I am the U15 coach of Eintracht Frankfurt. So I already participated in the tournament a few times. The tournament is very well organized, especially regarding digital innovations for players, parents, and fans.

108 **6. Which digital innovations have you already observed at the MTU-Cup?**

109 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

Implementation

Opportunities

Implementation

Opportunities

Contextual Foundations

Implementation

Opportunities

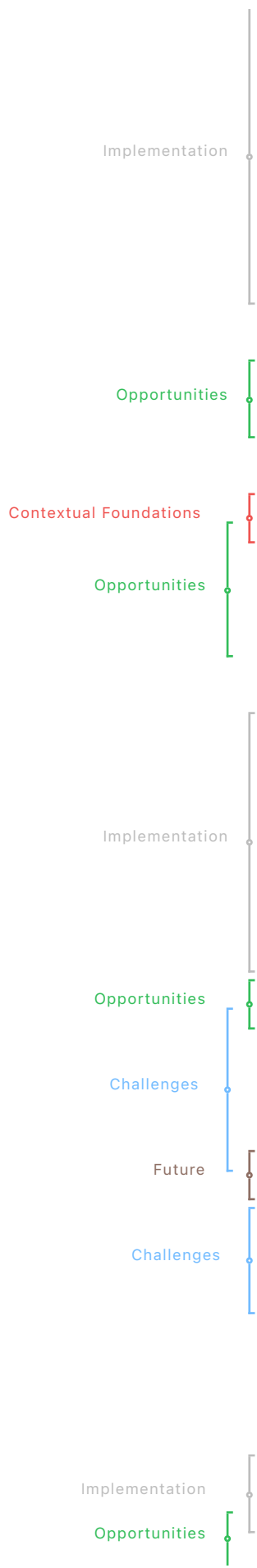
Challenges

Future

110 **Segelbacher:** In recent years, we have significantly expanded the social media presence around the MTU Cup. ~~Nina, Annalena, and Nadja have taken care of it with incredible dedication before, during, and after the tournament all on a voluntary basis, just like the rest of the organization.~~ They managed not just to share results but to truly capture emotions: behind the scenes insights, player interviews, highlight clips, and little stories that define the spirit of the tournament. This was really well received. Additionally, we installed two large video screens in the hall. For the first time, we were able to broadcast interviews directly from the pitch side, supported by additional cameras and livestreams. This gave both on site spectators and fans at home the feeling of being even closer to the action. Because everything is run by volunteers, such innovations are not a given for us but something we are genuinely proud of. YouTube has been a real hit for us for years. Many matches, highlights, and interviews are uploaded and reach not just local fans but viewers around the world. You can truly feel that all these digital innovations from livestreaming to social media have taken the tournament to an entirely new level. For us as a small voluntary team, the greatest feedback is when players, coaches, parents, and fans tell us that the MTU Cup is not only a sporting highlight, but also something truly special in terms of atmosphere. Of course, we have to be honest: major digital leaps like virtual or augmented reality are still missing. That is simply due to our very limited budget and strong reliance on sponsors. These technologies are expensive, and we always have to weigh what is realistically feasible. Nevertheless, we constantly look for small steps we can take to continue developing the MTU Cup digitally in the future.

Implementation

111 **Savic:** I have already noticed some digital innovations at the



MTU Cup. There is a website where live scores are displayed and the full schedule is accessible. Matches are also livestreamed and sometimes even covered by YouTubers.

112 **Schwedt:** A rapidly growing social media presence, both from the organizers and the participating teams. Introduction of LED technology for video walls, with two large screens installed since 2024. Since 2024, matches have also been streamed via pay per view, and interviews are broadcast on the video walls.

113 **Röhm:** The use of social media for real time communication, short highlight videos, story formats, and initial livestreaming efforts are definitely positive developments.

114 **Müller:** Especially in the past year, 2024, we made a huge leap forward at the MTU Cup in this area. Players and coaches were interviewed and filmed, which was very well received by the fans. The strong interest in influencers like Visca Barca reporting on the tournament clearly underlines this.

115 **Musso:** Live streaming of the matches.

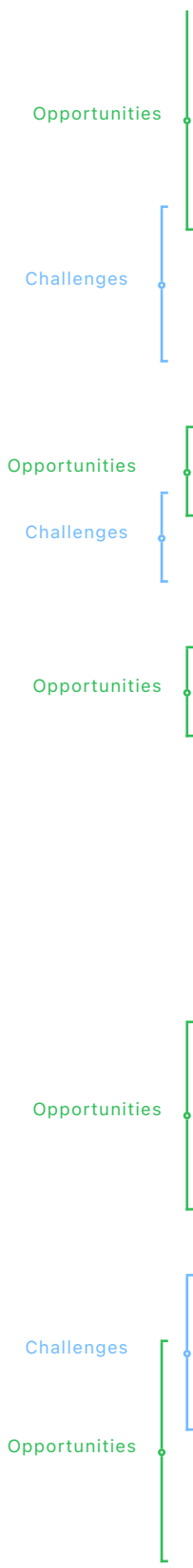
116 **Nikic:** Livestreaming, video walls, and social media channels such as YouTube and Instagram.

117 **Jakic:** The MTU Cup does not use digital innovations in the narrower sense, but rather relies on high reach social media platforms like YouTube and Instagram to distribute content. One positive aspect is the strong reach, as shown by a viral YouTube video that was produced without any budget. On the downside, the current ticketing process is inefficient: fans must buy tickets through a website that charges high transaction fees (five euros or more), pick them up in person or receive them by mail, which is time consuming and outdated. A fully digital ticketing system using QR code based e tickets would reduce the workload for volunteers. External communication has reached its limits with current resources, but internal processes, handled by 200 volunteers using only email and WhatsApp show great potential for digital optimization.

118 **Experts of Participating Youth Teams:**

119 **Brosamer:** I have noticed several steps forward, particularly in terms of live streaming, video walls, and social media presence. These elements help bring the tournament to a

<p>Opportunities</p>	<p>broader audience and improve the experience both on site and remotely.</p>
<p>Implementation</p>	<p>120 Heseltine: Live streaming and camera coverage have improved a lot. We've also seen match highlights posted quickly on social media and the use of tablets and laptops for analysis by coaching staff.</p>
<p>Opportunities</p>	<p>121 Unsworth: Live matches on screens, updated match schedules online, and quick photo uploads to social platforms are some of the things I've seen. It helps everyone stay informed and engaged.</p>
<p>Implementation</p>	<p>122 Playa: Live streaming of games, digital screens in the hall, and the use of social media to post highlights and updates have all become more prominent. There is also better digital coordination between teams and organisers via apps or internal tools.</p>
<p>Opportunities</p>	<p>123 Jamet: The presence of video walls showing interviews and match clips, as well as the live broadcasting of games, really stood out to me. Also, the social media updates were fast and well managed.</p>
<p>Implementation</p>	<p>124 Ryan: Live streaming has improved a lot and allows others to watch from anywhere. I also noticed that the video content on Instagram or YouTube was quick and high quality, which makes a difference in visibility.</p>
<p>Opportunities</p>	<p>125 Uygur: Digital innovations already implemented at the MTU Cup include a live scoreboard, YouTube videos, and a strong online presence.</p>
<p>Implementation</p>	<p>126 <i>Follow-up question:</i> Which digital innovations at the MTU-Cup stood out to you positively or negatively?</p>
<p>Implementation</p>	<p>127 Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):</p>
<p>Opportunities</p>	<p>128 Savic: I see the live scores and livestreams as a clear positive. On the negative side, matches are filmed from only one camera angle multiple perspectives would significantly enhance the viewing experience.</p>
<p>Challenges</p>	<p>129 Schwedt: A clear advantage is that the streaming offer is</p>
<p>Opportunities</p>	<p>129 Schwedt: A clear advantage is that the streaming offer is</p>



accessible worldwide, providing a great opportunity for parents, fans, and clubs to follow the action live or on demand. The live broadcasting of interviews on the video walls in the hall also enhances the spectator experience. In addition, modern technical standards such as a digital audio mixer provide significantly improved sound quality in the venue. On the other hand, there are also challenges: mobile internet reception in the hall is sometimes poor, which can be problematic for both spectators and the broadcast. Additionally, the hall operator's WiFi offer is relatively expensive, limiting the flexible use of digital services on site.

130 **Röhm:** Positive aspects include the fast publication of photos and match highlights, which strengthen the event's visibility. Areas for improvement include more continuity, stronger visual branding, behind the scenes content, and interactive challenges.

131 **Nikic:** The video walls are definitely a positive element, although in my opinion they could be used much more extensively. ~~I have not noticed any negative aspects so far.~~

132 **Jakic:** As previously mentioned, nothing negative has stood out to me at the moment.

133 **Experts of Participating Youth Teams:**

134 **Heseltine:** Live streaming of the tournament & virtual experiences. For example, using their smartphone, fans can create a 360 degree scan of themselves that can replace an actual player in a game of the tournament or put them in a team with explayers who have been to that tournament and gone on to be successful.

135 **Playa:** One major issue we encountered was related to the refereeing, where a rule infraction went unnoticed for a long time and impacted the match result. A digital tracking solution for example, GPS tags or chips linked to an on screen player count could have prevented this. This highlights both a current limitation and an opportunity. Moreover, I recall that instant replays of key plays were occasionally displayed on the video scoreboard, which was a valuable feature for fans, enhancing their viewing experience.

136 **Uygur:** ~~Nothing negative has been noticed so far.~~#

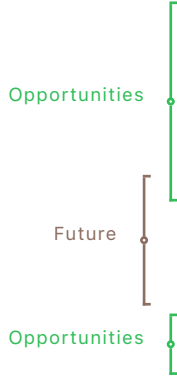
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7. What successful examples of digital fan experience solutions from professional sports could serve as inspiration for the MTU-Cup?

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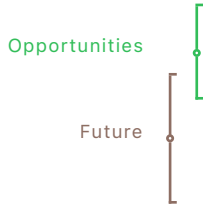
Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):

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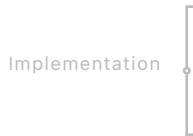
Segelbacher: Some solutions from professional sports could also serve as inspiration for the MTU Cup. Livestreams with integrated player information, as seen in the Bundesliga, would be a realistic next step. Interactive formats such as voting on social media for example, choosing the player of the match would also be a good fit. Concepts like virtual reality, where fans can virtually sit at the edge of the pitch, are currently beyond our capabilities but show where developments could head in the long run at MTU-Cup. Overall, it is about encouraging digital fan interaction and giving them a more active tournament experience.

140



Savic: In professional sports, artificial intelligence is used to analyze player performance in real time for example, pass accuracy, running paths, and duel success rates. This data is processed live during the match and made available to fans. Technologies like these could also be used at the MTU Cup to make the matches more exciting and transparent.

141



Röhm: Examples include personalized reels like in the Champions League, short TikTok formats used by Bundesliga clubs, or the use of micro influencers such as youth players themselves as content creators.

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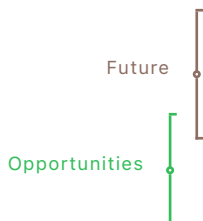


Müller: I believe fans want to see exciting football scenes like tricks or beautiful goals that is what makes the sport so appealing. It is also fascinating to learn about the international teams and their stories. Our interview with the team from Delhi was streamed directly to India. It was great to see that the tournament could be viewed there as well, essentially giving it global visibility through this channel.

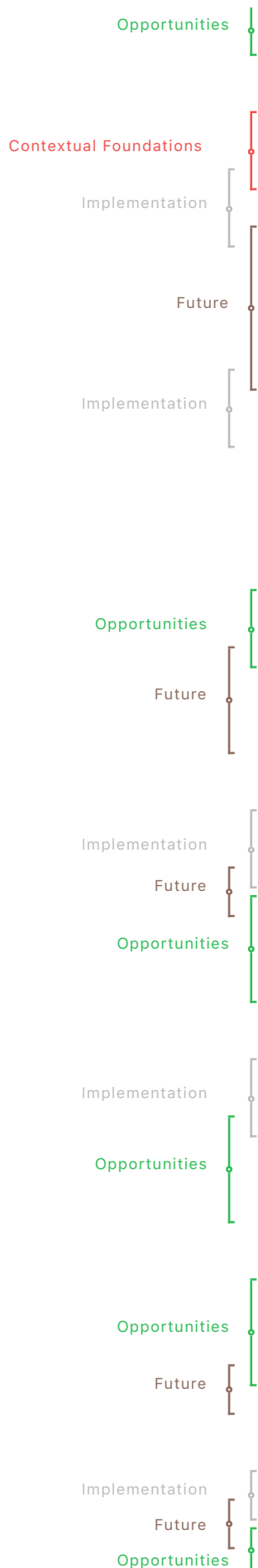
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Musso: Augmented reality for virtual selfies with players, AI generated highlight videos, and interactive apps with live voting and mini games.

144



Nikic: An MTU Cup app would be a fantastic feature, with an integrated live scoreboard and up to date statistics such as top scorers. It could also include team presentations, voting options, and fan polls. Replays of goals on the video walls and cameras placed behind the goals would enhance the experience. A fan cam, like those used in large stadiums,



would also be great. A prize draw could be integrated into the app as well.

145

Jakic: The million euro budgets of professional sports are not transferable to the MTU Cup, but scalable approaches can still provide inspiration. Bundesliga clubs use fan apps that offer live statistics, replays, and voting features such as player of the match. A simplified version, perhaps via Instagram stories or a Telegram channel, could be implemented at low cost to involve fans interactively. Similarly, short highlight videos like those posted by professional clubs on TikTok could be adapted if produced by local students or volunteers. The key is to tailor these formats to the limited resources of the MTU Cup in order to increase talent visibility without overburdening the volunteer team.

146

Experts of Participating Youth Teams:

147

Brosamer: A good example from professional football is the use of digital player profiles with live statistics, such as those used in TV broadcasts. This could be adapted for the MTU Cup to give fans better access to and engagement with the young talents. Team introductions via digital channels before the tournament would also be a valuable addition.

148

Heseltine: I think the coverage of games in the Premier League is really good. Short highlights, live statistics, and post match analysis with replays. If you could do that at MTU Cup level, it would be really exciting for fans and players. For example, the use of tunnel cams and pre match interviews on the Premier League's social media channels helps build excitement and connect fans emotionally with the game.

149

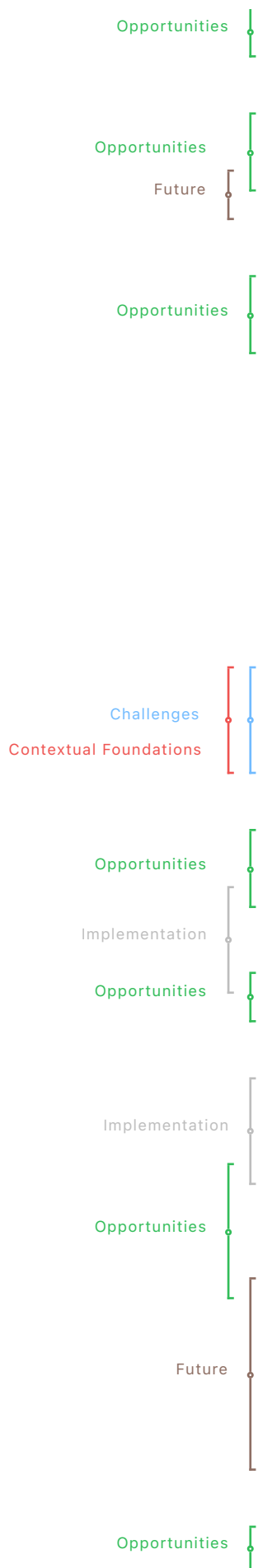
Unsworth: Social media clips and post match interviews like in the Premier League could be used. Also, the use of apps where fans can follow player stats or highlights. The Premier League's Match Centre on their website is a great example it provides a clean, mobile friendly experience with lineups, live stats, and video content.

150

Playa: I believe the Bundesliga's use of real time data and virtual player stats during broadcasts is impressive. Also, the NBA does a great job with fan interaction through apps and voting features. These kinds of tools could be scaled down for youth events to bring fans closer to the game.

151

Jamet: I've seen great use of fan voting in Ligue 1, where fans select the player of the match. This could be easily integrated into the MTU-Cup. Also, pre match content like



locker room views or warmups posted on social media helps build excitement.

152 **Ryan:** The Premier League match coverage is a good model. Seeing the team lineups, stats, replays, and interviews brings the fans closer. Doing a simplified version for MTU would be amazing.

153 **Uygur:** Well organized events with special activations, even in the evenings after the matches, serve as great inspiration from professional sports.

154 **8. How could digital innovations be used to promote interaction between fans, players, and the event team at the MTU-Cup?**

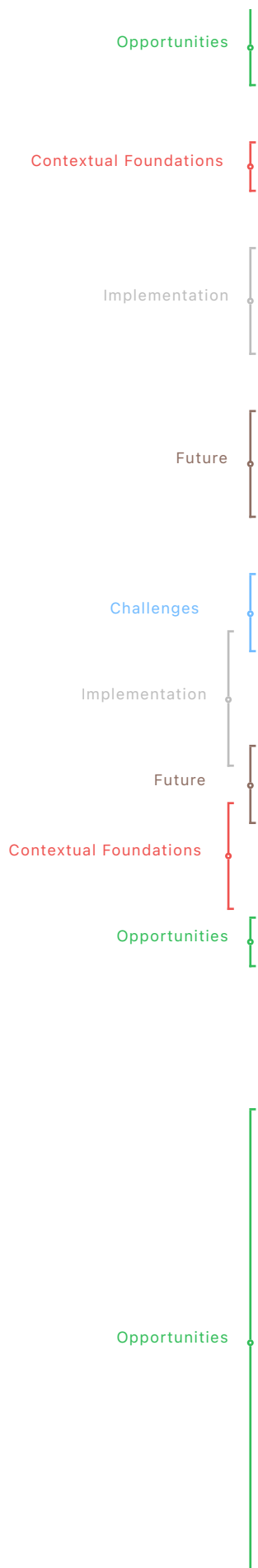
155 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

156 **Segelbacher:** This only works via smartphones and apps. However, the players need to stay focused on the game and the tournament itself, which is also the coach's goal. They should not be distracted too much.

157 **Savic:** Digital innovations can make watching the games more exciting and can also motivate players by helping them better recognize their potential for improvement. For the event team, it becomes easier to moderate matches, award prizes, and automate processes which also reduces the need for staff. Overall, all participants could be more actively involved this way.

158 **Schwedt:** Some exciting ideas for enhancing the fan experience could include the option to book autograph sessions digitally to reduce waiting times and streamline processes. Interactive formats such as polls or prize games accessible via QR codes on the video screen could also increase audience engagement. Modern digital lighting technology could be used to emotionally highlight special moments during matches or shows. A particularly innovative idea would be the use of AI generated video highlights that summarize key moments in real time. Additionally, multifunctional fan wristbands could be introduced to create a visual community experience in the stands through lighting effects, while also serving as a payment method or for participating in prize games.

159 **Röhm:** Interactive formats like polls, Q and A sessions, fan



contests, or social media takeovers by teams could be helpful. Personalized content and live commentary streams would also be effective.

160 **Müller:** Personally, I find video footage the most valuable. So cameras and microphones are key.

161 **Musso:** An app that allows fans to submit questions to players or coaches. A points system for interactions, such as visiting booths or cheering for teams. Live polls and challenges during the matches.

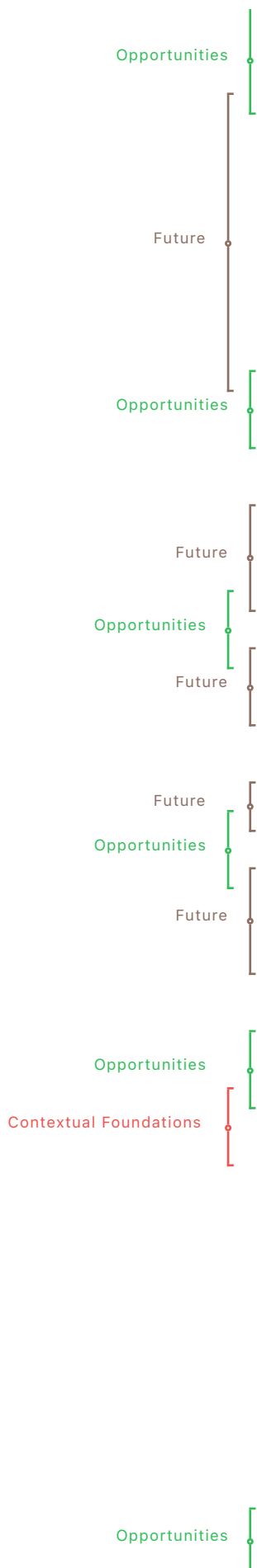
162 **Nikic:** Through an MTU Cup app, fans could participate in polls or voting such as best player or goalkeeper and leave comments. A prize game could also be integrated into the app, replacing the traditional raffle.

163 **Jakic:** Interaction at the MTU Cup currently focuses on social media comments, but moderation is time consuming due to liability issues. With limited resources, it is recommended to use social media more strategically for interaction, for example through Instagram story polls like "best trick of the game" that involve fans and players without much effort. Mobile apps are unrealistic for now, but a QR code linking fans to a Telegram channel with live updates and player information could promote engagement. Social media is key because it is free and has broad reach, but any innovation must minimize the workload for volunteers for example through automated templates for posts or polls. Partnerships with local media students could help with content production.

164 **Experts of Participating Youth Teams:**

165 **Brosamer:** Live video calls with former players could be a great way to strengthen the emotional connection with the fans and offer interactive formats between the teams and the audience. These kinds of experiences can build bridges between generations and promote active engagement.

166 **Heseltine:** Fans could vote for their favourite goal or player during the tournament via a simple app or website. Players could send shoutouts via video, and the event team could run fun challenges on social media that include both fans and teams. Additionally, interactive messages shown live on the venue's video walls or real time reactions via platforms like Instagram could foster more emotional fan involvement.



167 **Unsworth:** Interactive polls or mini competitions during the event could work well. Short behind the scenes clips and Q&As with players and staff on social media would also make people feel more connected. Furthermore, virtual messages or highlights from former MTU Cup players shared through AR filters or interactive content could inspire current participants and fans alike.

168 **Playa:** A dedicated MTU-Cup app could let fans vote, leave comments, and receive exclusive content. Digital innovations like a QR code based scavenger hunt, push notifications, or AR powered team introductions would turn match breaks into interactive experiences. Quick interviews, trivia games, and digital team cards could enhance engagement across age groups.

169 **Jamet:** Digital boards in the venue could show fan messages or poll results. Social media contests, like predicting match outcomes or creating fan art, could also bring fans and players closer together. In addition, jersey cameras could allow fans to experience the game from a player's perspective. Combined with a badge system that rewards fan actions like cheering or visiting sponsor booths, this would create a deeper level of immersion.

170 **Ryan:** An event app with voting, live updates, and fan shoutouts could be really fun. Coaches could give quick interviews and players could thank fans after games via video. Membership in a tournament app could include perks like prize raffles, exclusive digital content, and even AR based virtual selfies with players to turn spectators into part of the MTU-Cup community.

171 **Uygur:** More events involving fans and viewers could strengthen interaction, such as meet and greets between coaches, players, and fans with light shows. Social media and mobile apps play a very important role for marketing and engagement.

172 *Follow-up question:*
What role do social media and mobile applications play in this context?

173 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

174 **Savic:** Social media makes it possible to reach a much larger target audience and share up to date content directly.

<p>Opportunities</p>	<p>175</p>	<p>Mobile applications can significantly enhance the viewing experience.</p>
<p>Contextual Foundations</p>	<p>176</p>	<p>Schwedt: Within the target group, mobile applications and social media are essential. The smartphone is the most important companion and access point for young fans.</p>
<p>Opportunities</p>	<p>177</p>	<p>Röhm: Social media is the most important channel for reach and interaction. Mobile apps can bundle content and enable push notifications.</p>
<p>Opportunities</p>	<p>178</p>	<p>Nikic: Since almost everyone now owns a smartphone, a mobile application would offer real added value and play an important role.</p>
<p>Contextual Foundations</p>	<p>178</p>	<p style="text-align: center;">Experts of Participating Youth Teams:</p>
<p>Contextual Foundations</p>	<p>179</p>	<p>Heseltine: A big part as social media is massive today, every person uses it. TikTok & Instagram being the most used apps in the world. You can connect to anyone in the world via social media, so the implications are massive.</p>
<p>Opportunities</p>	<p>180</p>	<p>Unsworth: The virtual interactions could be promoted on social media.</p>
<p>Opportunities</p>	<p>181</p>	<p>Playa: They are vital. Most attendees especially teens and parents have smartphones. Leveraging Instagram or TikTok challenges, augmented reality filters, or gamified apps can massively boost engagement. Live content sharing through official channels would also expand the reach and post tournament buzz.</p>
<p>Opportunities</p>	<p>182</p>	<p>Jamet: It is crucial in my opinion. People have now learned to use their smartphone, it is an easy way to make them take part in the event, involve them in an easier way, communicate with them... Mobile app seems to be the easiest way for the organizers and for the fans to involve them.</p>
<p>Opportunities</p>	<p>183</p>	<p>Ryan: A big part as it connects people globally to the tournament and the players organizers and the host town, hotels towns and local people. It is informative and current, a source of information quickly at your fingertips. A good way to advertise local businesses.</p>

184 **9. Which of the following technologies do you consider particularly promising for the MTU-Cup?**
(Examples for inspiration: mobile apps, social media integration, live streaming, virtual reality, cameras)

185 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

Opportunities

186 **Segelbacher:** Livestreaming is essential for fans watching from other cities or countries, as well as for parents. ~~One example is the public viewing held in New Delhi.~~

Opportunities

187 **Savic:** Mobile apps are particularly promising because they are easy to use and can display all important data in one central place. Social media is ideal for reaching a much larger audience and attracting more viewers, even at short notice. Livestreaming allows people from abroad to follow the tournament, which greatly expands its reach. Cameras are very important the more perspectives, the better the fan experience and the analysis of the game. More cameras also mean more usable data.

188 **Schwedt:** ~~As mentioned in previous answers, I consider all of the suggestions in this question to be realistic and important.~~ In my view, expanding camera use is essential. Multiple camera positions and the use of a mobile camera would make the live event more exciting, dynamic, and bring it closer to fans at home.

Opportunities

189 **Röhm:** The integration of social media plays a central role in increasing reach and interaction with fans whether through live updates, behind the scenes insights, or interactive formats. In addition, mobile apps offer many opportunities to provide schedules, information, or personalized content directly to the viewers' smartphones. Livestreaming also allows the tournament to be experienced beyond the venue, enabling parents, friends, and fans around the world to be part of it. Targeted use of cameras enables the creation of highlight clips that serve as memories and can also be used effectively in media. Virtual reality is an exciting future possibility but currently still too complex and expensive for practical use.

Future

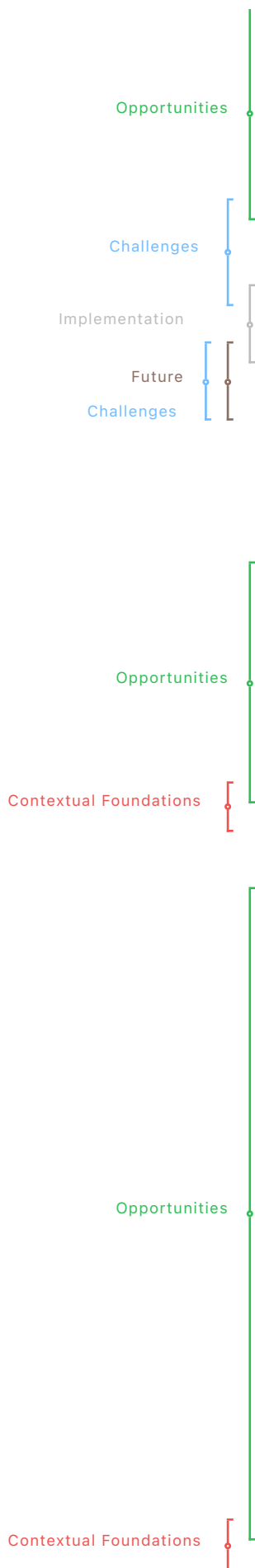
Opportunities

Future

190 **Müller:** In this order: cameras (including via smartphone or tablet), social media integration, livestreaming. Mobile apps and virtual reality are also ideas I can imagine being useful.

Opportunities

191 **Nikic:** Replays of goals on the video walls, cameras placed behind the goals, an MTU Cup app, display of real time



statistics, and a fan cam shown on the video wall.

192 **Jakic:** Livestreams are the most promising technology, as demand is high but currently unmet. Free livestreams with two or three cameras that provide close ups of players are essential to showcase the energy and tricks of the talents, as seen with teams like Palmeiras from Brazil. Previous livestreams have either been amateurish, using only a single top view camera, or hidden behind paywalls, which limits reach. Integrating social media elements, such as including Instagram handles in the livestream, could increase engagement. While virtual reality or mobile apps are currently too costly, local sponsors could finance better camera coverage in exchange for short advertising spots.

193 **Experts of Participating Youth Teams:**

194 **Brosamer:** I think the combination of live streaming and social media integration is particularly promising. A well produced stream shared through popular platforms can significantly increase visibility and emotional connection.

195 **Heseltine:** Live streaming is the most promising one. Also, I think cameras on the pitch and in warm up zones could provide good content. Social media integration is also important because it is what most people use daily.

196 **Unsworth:** Live streaming and cameras. I think fans, players, and family want to watch and rewatch the games. Social media highlights are also good for sharing key moments.

197 **Playa:** I believe mobile apps and social media integration are essential. They can act as central hubs for live scores, highlights, schedules, and engagement features. Also, the use of placed cameras for multi angle replays and automated highlights could elevate the quality of the experience.

198 **Jamet:** I would say mobile apps. It's the easiest way to engage everyone. Social media is a strong second. Cameras and streams are already in use but could be expanded with better quality and maybe live commentary.

199 **Ryan:** Live streaming is essential for the clubs who take part to connect with their own fans and staff back at the club. Also the global appeal of clubs will be a big pull for the tournament. Social media essential for current and regular updates as well as keeping up with trends Advertising will

Contextual Foundations

Future

help finance the tournament and ensure development and investment will continue to support the tournament.

200 **Uygur:** All AI based technologies are seen as highly promising for the tournament's further development.

201 **Cluster C: Challenges, Limitations, Implementation Ideas & Future**

202 **10. In your opinion, what would be a realistic first step toward implementing digital innovations at the MTU-Cup? (Can you give an example?)**

203 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

Contextual Foundations

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204 **Segelbacher:** We are already well positioned in this area, especially when it comes to livestreaming and social media. A realistic next step would be to better connect the existing digital services. For example, we could display dynamic player information during livestreams or involve the audience more through social media using polls or interactive formats. Another option could be voluntary player profiles with social media links on our website or within an app to further strengthen fan engagement.

Implementation

Future

Implementation

Future

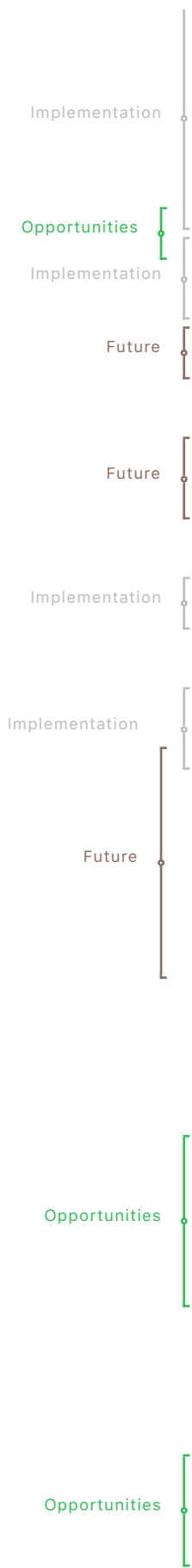
Opportunities

205 **Savic:** A realistic first step would be to use more cameras from different angles to better capture the match. A user friendly app would also be helpful, with all videos, match results, and the full schedule available in one place. One example would be installing cameras at each side and corner of the pitch a total of eight to capture the action from every angle. This would be complemented by a dedicated MTU Cup app where live scores, schedules, and videos from all games are uploaded immediately after the final whistle. Highlight clips showing the best goals and moments from multiple perspectives could also be created, similar to what fans are used to in professional football. This would greatly improve the fan experience and make the MTU Cup even more attractive.

Implementation

206 **Schwedt:** More cameras, polls, and prize games using QR codes.

207 **Röhm:** A consistent social media concept with a content



plan, branding, and defined formats. One idea could be an Instagram reel format like “1 Day, 1 Team” a 60 second daily feature following one team throughout the day.

208 **Müller:** We need to continue supporting and ideally expanding our media team (Nina and team) for the next tournament. I believe that interviews with players should also be conducted by young people. Coaches, organizers, and sponsors should be approached in a way that matches their age and interests. What I find particularly exciting is the idea of a jersey camera worn by a player. I would love to see that live and experience the new perspectives it could offer.

209 **Musso:** A realistic first step would be the launch of a tournament app with basic functions like match schedules, results, and interactive features such as polls or mini games.

210 **Nikic:** Replays of goals on the video walls, the launch of an MTU Cup app, a fan cam, and behind the goal cameras.

211 **Jakic:** A realistic first step would be to better link existing technologies like livestreams and social media to improve the fan experience. My concrete proposal: include dynamic on screen displays during the livestream showing player information such as name, position, and voluntarily linked Instagram or TikTok accounts, so fans can identify the talents and follow them directly. In addition, a privacy compliant service could be introduced before or at the beginning of the tournament that lists all teams and players, allowing players to voluntarily add their data (first name, last name, social media accounts). This service, accessible via the MTU Cup website or a simple app, would avoid data protection issues by being fully voluntary, while still boosting player visibility even if not everyone participates. A voting feature (such as "Player of the Match") could also be implemented via Instagram Stories to foster engagement. Collaborations with local universities whose media students handle the livestreams as part of practical projects would help reduce costs. These steps would increase fan engagement, expand social media reach, and make the tournament more appealing to sponsors.

212 **Experts of Participating Youth Teams:**

213 **Brosamer:** Live streaming in different countries would be a realistic first step. This would allow international accessibility and visibility of the tournament, especially for teams traveling from abroad.



214 **Heseltine:** Understand what the teams, event staff, players, and audience want first. Before implementing anything, it's necessary to identify the expectations and needs of the users to improve their experience at the MTU Cup.

215 **Unsworth:** I think the first step would be to contact some past players who have gone on to have careers in the game and ask them if they would be happy to have their image used in a digital format to promote the MTU Cup. For example, ask Gvardiol from Man City if he would produce a piece to be used digitally.

216 **Playa:** Introducing an official tournament app could centralize information and enhance engagement. Features could include schedules, player profiles, results, live updates, and interactive elements like voting or quizzes. For example, fans could vote for the "Player of the Match" directly in the app, unlocking a highlight clip.

217 **Jamet:** A mobile app that gathers all the information and exclusive content would be the most realistic step. It should include videos of players and teams and systems for ordering food to avoid queues. This makes it easier for fans to access information and stay engaged.

218 **Ryan:** Livestreams and the ability to download the games to view back quickly for fans and also the players and coaching staff. Interactive apps that are live during play throughout the tournaments. Live digital scoreboards and video screens to feel part of the experience.

219 **Uygur:** A realistic first step would be using Instagram or TikTok, along with team introductions using photos. For example, this could include interviews, QR codes, player sponsorships, and dedicated care teams via the tournament homepage.

220 **11. When thinking of other industries, what innovative approaches to audience engagement could be transferred to the sports sector?**

221 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

222 **Segelbacher:** Especially in basketball, and particularly in

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the NBA, you can see how strongly fans are digitally involved nowadays. ~~I was in the United States myself last August when my daughter was doing her semester abroad, and I had the chance to experience it live.~~ Livestreams with multiple camera angles, in game fan voting, and personalized highlight clips all make the fan experience much more immersive. These kinds of approaches could also be exciting for the MTU Cup to bring spectators even closer to the action.

223 **Savic:** From the event and entertainment industries, one could adopt interactive features such as live polls, real time feedback, or personalized content. The gaming sector also offers interesting ideas, such as digital reward systems or virtual trading cards for fans. These concepts could make sports, especially youth tournaments, much more interactive and appealing to audiences.

224 **Schwedt:** At a Coldplay concert, we once received a light up wristband. It created amazing light effects and animations in the stands. Other ideas include showing fans on the video wall for example, with kiss cams, fan cams, or bongo cams and running prize games for on site spectators. A photo is taken at the entrance, and later all photos are displayed rapidly on the video wall. The person whose photo stops on screen wins something.

225 **Röhm:** Countdown posts, exclusive behind the scenes stories, digital trading cards, AR filters, or hashtag challenges like you see at music festivals.

226 **Müller:** A “best player of the match” or overall MVP voting feature via a mobile app for fans would be great. It would help us include the audience even more actively.

227 **Nikic:** Creating a community around the event.

228 **Jakic:** Football is already digitally innovative, but esports offers valuable ideas. Esports platforms provide real time stats such as individual player performance data, which fans find fascinating. For the MTU Cup, a simplified real time match analysis is recommended, showing stats like pass accuracy, running distance, fastest player, or best defense. These could be shared via social media or livestream integration to provide analytical insights. Local IT students could develop a simple tracking tool based on existing camera feeds to keep costs low. Such analytics would enrich the fan experience and strengthen the MTU Cup’s positioning as a platform for emerging talent.

229

Experts of Participating Youth Teams:

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Heseltine: Several industries offer innovative audience engagement approaches that can be adapted to the sports sector. These include leveraging data-driven personalization, creating interactive digital communities, implementing smart loyalty programs, streamlining ticketing experiences, and utilizing social media effectively. Specific examples include personalized content recommendations, AR experiences in stadiums and at home, and engaging fans in interactive challenges.

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Unsworth: I think that the American sports industries have an extensive fan experience programme surrounding their sports, i.e. NBA, NFL etc. They have fan cameras etc.

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Playa: Retail and theme parks use gamification, reward points, and interactive maps. Museums use AR for storytelling. These concepts can be translated into fan badges, real time exploration games, and personalized content delivery at sports events.

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Ryan: Maybe AI and virtual reality games for fans to play against each other or the teams themselves? Video games of the MTU Cup? Fans can play after the games on the field, enjoy the experience of the pitch and stadium themselves.

Future

234

Uygur: QR codes and digital photo booths are innovative ideas from other industries that could be transferred to sports events.

Opportunities

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12. If you had an unlimited budget at MTU-Cup, which digital ideas would you implement immediately?

236

Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):

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Segelbacher: ~~If I were to think a bit more outside the box and budget were not an issue, I would probably implement the following three ideas:~~ First, mini cameras integrated directly into the players' jerseys would allow fans to experience the game live from the perspective of their favorite player, creating an entirely new level of closeness and emotion. Second, an interactive fan zone with VR

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headsets would let spectators stand virtually on the edge of the pitch and follow game scenes from various perspectives, enhancing the feeling of truly being part of the action. Third, “feel the game” seats connected to sensors on the field would transmit vibrations and movements during goals, tackles, or fouls in real time, allowing spectators not only to see the action but to physically feel it.

238 Savic: I would use drones flying above the pitch, equipped with special cameras to film the game from every angle. The footage would be streamed live on multiple platforms to reach as many viewers as possible. At the same time, the videos would be sent in real time to an AI system that analyzes them immediately. This way, player data such as running paths, passes, and duels could be captured and published in an app within seconds. The footage would also be automatically edited so that key moments are quickly accessible ideal for fans, coaches, and players. Coaches would also receive specific analytics to better adjust and improve their teams.

239 Schwedt: To further enhance the tournament experience, professional communication systems like intercom technology could be used to ensure seamless coordination between organizers, staff, and technicians. In addition, digital lighting could be employed to create powerful visual effects for team presentations or award ceremonies. A modern video production setup would allow for high quality recordings and live broadcasts, significantly increasing both media reach and documentation quality. Another highlight would be inviting well known stars and artists to generate attention and provide an unforgettable experience for the young participants.

240 Röhms: Livestreaming with commentators, mobile content teams for each pitch, an event app with fan voting, and on site AR experiences.

241 Müller: I have quite a few ideas, some of which I already mentioned earlier for example, cameras mounted on players’ jerseys.

242 Musso: A fully immersive virtual reality experience that allows fans to see the game from a player’s perspective. AI powered analytics and highlight videos in real time. An interactive points system with rewards for fans.

243 Nikic: I would develop an app that includes the features mentioned above fan voting, a donation button, and prize games. Camera technology would be expanded with goal and fan cams, and there would be a light show.

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244 Jakic: With an unlimited budget, the MTU Cup would be positioned as a global center for discovering future world class players. The following measures would be prioritized. First, live broadcasting the entire tournament on public television to ensure maximum reach and attract corporate sponsors. Second, introducing an AI driven platform that automatically recognizes players, creates highlight videos, and generates statistics such as pass accuracy and sprints, similar to what is used in esports. Third, developing a fan app with personalized content like highlights of favorite players, voting options, and gamification elements such as points for interactions. Fourth, inviting international scouts and clubs, supported by targeted social media campaigns to establish the MTU Cup as a talent showcase. These steps would extend tournament coverage for weeks and help position youth football as a global phenomenon.

245 Experts of Participating Youth Teams:

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246 Brosamer: With unlimited resources, I would first implement high quality live streaming in different countries to ensure maximum global reach and visibility. I would also invest in immersive VR live experiences that allow fans to feel as if they are standing pitchside. As an additional idea, I would experiment with a smart ball equipped with internal cameras and sensors that capture in game footage and provide insights into ball speed, spin, and pass accuracy adding both excitement and analysis value.

Future

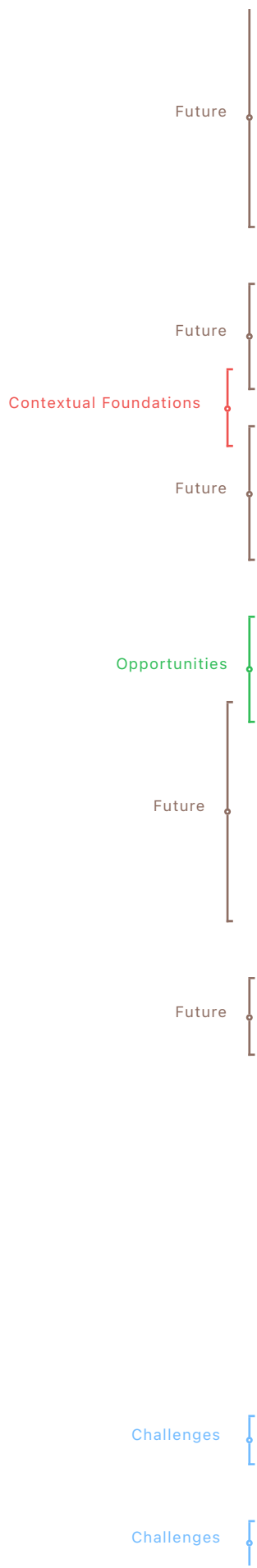
247 Heseltine: I would introduce virtual meet and greet experiences where fans could interact with professional managers and players in a digital environment. Additionally, I would launch a VR based tactical zone, where young fans can step into the shoes of a coach and make real time decisions during simulated game scenarios, learning through gamification. To bring fans even closer to the game, I would also test jersey mounted micro cameras that stream action from a player's perspective, offering unique behind the scenes content from the field.

Future

248 Unsworth: I would go with interactive player holograms in the arena, allowing fans to take photos or learn about their statistics in real time. For an additional immersive element, I'd add motion tracking zones around the pitch that let fans view slowmotion replays from 360 degrees, similar to the Premier League's "Match Zone."

Future

249 Playa: I would implement real time stat tracking for each player using wearable wristbands, allowing data to be collected and shown live. AI would generate instant video



highlight reels. Fans could enjoy immersive VR booths and live post game interviews broadcast through the tournament app. I would also add augmented reality photo booths where fans can pose with digital avatars of famous players. As a next level idea, I'd install player positioning sensors under the turf, allowing fans to replay entire game sequences with animated overlays that visualize player movements, heat maps, and key plays.

250 **Jamet:** Given the rich history of famous players who once played in the tournament, I would introduce a digital photobooth where children could take pictures with AR generated versions of those stars. To improve comfort, I'd also enable spectators to order food from their smartphones to avoid long queues. To add an experience directly tied to gameplay, I would introduce a realtime goal replay feature from multiple angles, including a ball cam that activates briefly after each shot, offering fans an entirely new perspective on scoring moments.

251 **Ryan:** With unlimited funding, I would install giant interactive digital screens throughout the venue and upgrade all food and hospitality zones to deliver a premium experience for every fan. Additionally, I would create an MTU-Cup fan hub in the form of a digital lounge, where fans can join virtual reality walkthroughs of locker rooms, watch player interviews, and even cast live votes for tactical decisions during friendly matches. To directly enhance the game atmosphere, I would also deploy LED lighting around the pitch that reacts in real time to goals, fouls, or exciting moments, intensifying the stadium experience.

252 **Uygur:** With unlimited budget, I would work on international reach, create custom banners for all teams, offer a VIP area, and stream two matches per game time.

253 **13. Which target groups might face difficulties using digital offerings?**

254 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

255 **Segelbacher:** All fans and spectators aged around 50 to 60 and above who rarely or never use social media.

256 **Savic:** Older people might struggle with digital offerings like

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apps, as they often have less experience using modern technology. As a result, this target group could be partially excluded. At the same time, however, younger target groups, especially teenagers and adults are reached to a much greater extent and engaged in the event.

257 **Schwedt:** People who do not use digital media at all, such as grandparents.

258 **Röhm:** Older generations and younger children both need easy access and accompanying content, particularly for parents.

Challenges

259 **Müller:** Older people in particular will likely have difficulties with new digital products. But that is not a major issue, since the MTU Cup is a youth tournament. We need to find a healthy balance when it comes to digital offerings. Spectators should not be distracted or annoyed by them. The experience must remain fun and entertaining people want to enjoy the tournament.

260 **Musso:** Older spectators who are less tech savvy. Families with small children, who may have less time or attention for digital services.

261 **Nikic:** From my point of view, I do not see any target groups that would struggle with digital offerings. ~~For example, my 75-year-old grandmother uses her Payback app regularly.~~

Challenges

262 **Jakic:** All target group young fans, parents, and grandparents could face difficulties if digital services are not free, intuitive, and free from obstacles such as paywalls or long advertisements. One minute ads before livestreams often make users suspect fake websites, reducing trust. Older audiences or those with low technical literacy may also struggle with complex apps or confusing navigation. Solutions could include simple access options such as QR codes for livestreams, short tutorials on the website, and a clear guarantee that content is free and ad free to maximize acceptance.

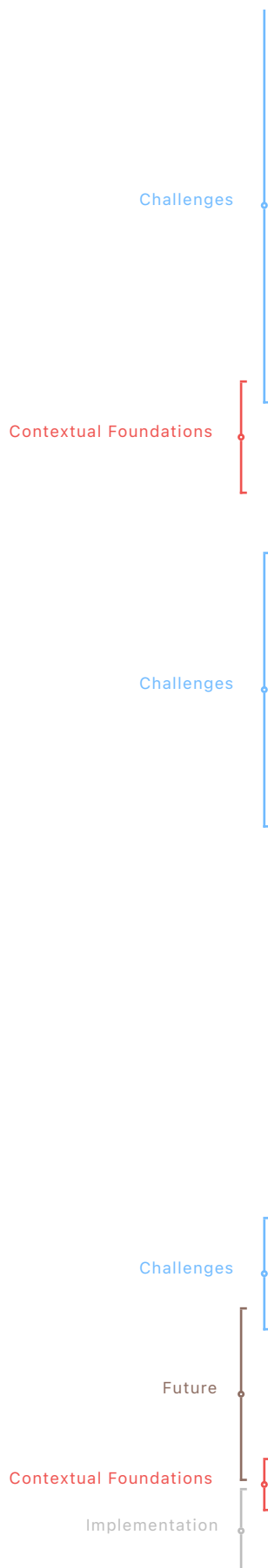
Implementation

263 **Experts of Participating Youth Teams:**

264 **Brosamer:** Minors.

Challenges

265 **Heseltine:** The older generation who hasn't been around technology as much as other generations so might struggle to understand it. They might prefer it in a different way.



Furthermore, people in other countries could be an issue because of the language barrier.

266 **Unsworth:** The over 50 age groups would likely find it harder with this, I am included.

267 **Playa:** Some parents or older relatives might find new apps or AR features confusing. Some children too young for smartphones might feel excluded. That's why it's key for digital tools to be optional, intuitive, and inclusive and always designed to support the game itself. Digital tools should enhance the experience, not be a barrier. It's important to keep the core focus of the competition football as the priority, ensuring that all innovations serve to support the enjoyment of the game.

268 **Jamet:** Probably the elderly people. But they tend to be more and more friendly with digital.

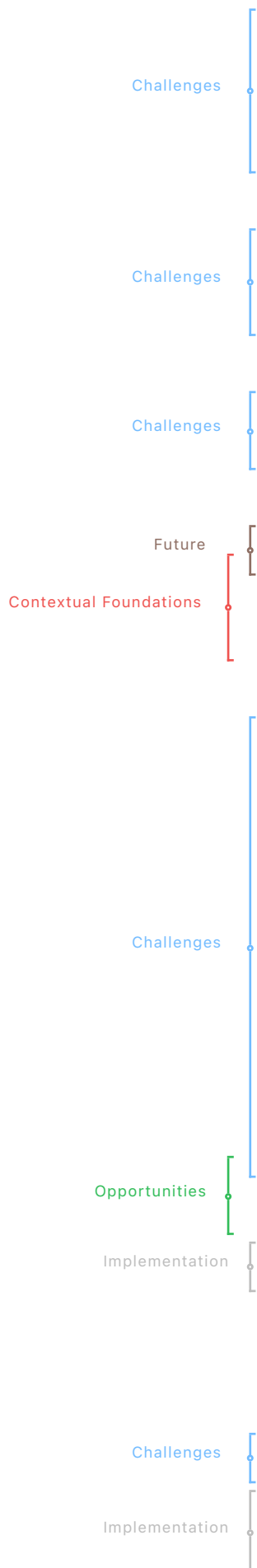
269 **Ryan:** People from a different generation and people who may have special needs, hearing or blindness.

270 **Uygur:** Children under the age of 13 could face difficulties using digital offers

271 **14. What obstacles do you see in the implementation digital technologies or innovations in youth football or at the MTU-Cup?**

272 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

273 **Segelbacher:** You always have to be very attentive, especially when it comes to data protection. When dealing with images or personal data of young people, the legal requirements are strict and rightly so. It is also a reality that junior events like the MTU Cup have limited financial resources. If sufficient budget were available, many of these innovative ideas such as mini cameras in jerseys, VR fan zones, or feel the game seats could certainly be implemented technically. But we are not in the professional sports sector, where money often plays little to no role. Nevertheless, we try to introduce digital innovations step by step within our means to continuously improve the fan experience.



274 **Savic:** A major hurdle is the budget advanced technologies are often expensive and difficult to implement in youth football. In addition, more cameras, equipment, and personnel would require more space and organizational resources. That makes implementation more complex and demands careful planning.

275 **Schwedt:** The main challenges are the organizational and time efforts required. It is important to consider the limited availability of the hall for extensive setup and breakdown. Another issue is the rapidly increasing costs.

276 **Röhm:** Limited budgets, lack of resources, data protection concerns regarding minors, and low awareness of the value that digital communication can add.

277 **Müller:** I believe there will be a lot of development in this area, including things we cannot yet imagine today. The digital world moves quickly, but it is also fascinating. I am sure that future innovations for the MTU Cup will be influenced by platforms like Instagram and TikTok.

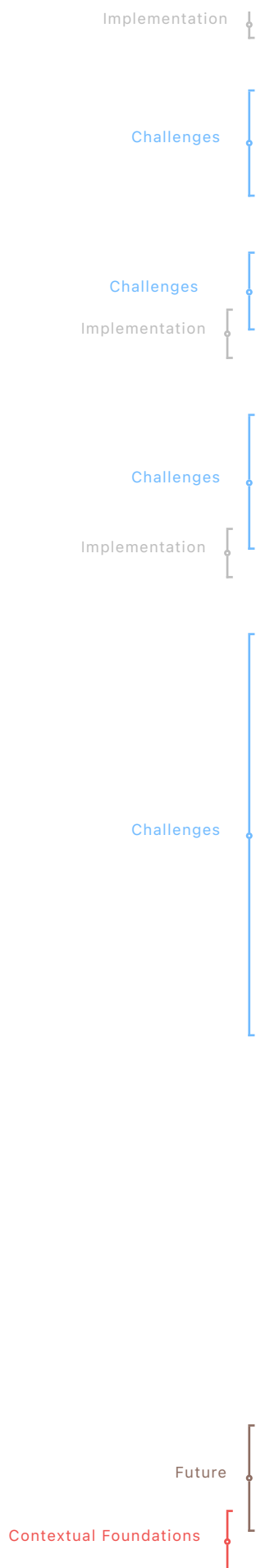
278 **Musso:** Limited financial resources, technological barriers such as missing infrastructure, and acceptance issues among less tech savvy target groups.

279 **Nikic:** I see the main hurdle in the limited space available in the hall.

280 **Jakic:** The primary challenge is the lack of budget. The MTU Cup is organized by 200 volunteers, and sponsorship funds only cover essential expenses such as infrastructure and accommodation for the players. Unlike major events such as the Football World Cup, there is no marketing budget for innovation. Other barriers include data protection regulations that make it difficult to monetize visual content and the high moderation workload for social media channels. That said, the marketing potential has been maximized within our limitations as shown by the viral YouTube video. Collaborations with universities could help overcome some of these barriers.

281 **Experts of Participating Youth Teams:**

282 **Brosamer:** Data protection and the responsible use of social media are key concerns when working with minors. Therefore, training sessions should be offered and mandatory for all players to ensure proper handling of digital



content.

283 **Heseltine:** Safeguarding concerns surrounding youth players may limit how much they can participate in digital initiatives. Ensuring compliance and safety is a necessary hurdle that must be addressed before innovation.

284 **Unsworth:** There are safeguarding issues in youth football that might limit the extent to which players can participate in digital formats. These constraints must be carefully managed to protect the integrity and safety of young athletes.

285 **Playa:** Financial constraints are often a limiting factor for youth tournaments, as is the availability of dedicated personnel to manage and maintain digital solutions. Legal restrictions around data protection, especially when minors are involved, are another significant hurdle. GDPR compliance and proper consent protocols are essential.

286 **Jamet:** The main obstacle is financial. Digital innovations are often expensive to develop and implement. This makes it harder for youth tournaments to adopt advanced solutions compared to professional events.

287 **Ryan:** Obstacles include finance, investment, and global advertising challenges. The limited size of the venue could also restrict the installation and integration of certain digital innovations.

288 **Uygur:** The biggest hurdles in implementing digital innovations are budget limitations, time constraints, and organizational framework conditions.

289 **15. What is your vision for the future of digital fan experience at youth sporting events over the next five years?**

290 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

291 **Segelbacher:** Every year brings new developments and improvements. Various apps or digital solutions are becoming more affordable over time, which makes them increasingly realistic for youth events. I believe that over the next five years, more and more of these innovations will be adopted

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by tournaments like the MTU Cup. But in the end, it is not just about money. You need people who are excited and motivated to implement and further develop these projects. Without the right mindset and motivation, even the best technology is useless.

292 **Savic:** I imagine there will be much more data available on individual players, such as running stats, pass accuracy, or duel success rates. Video footage will also play a much bigger role, with recordings from multiple angles that are quickly analyzed and made available online. This will make the fan experience more professional and engaging more like what we see in professional football.

293 **Schwedt:** One challenge with any digital development will be to bring athletes and fans together in person. This means the live event on site must remain at the center and be supported and enhanced through digital tools.

294 **Röhm:** Hybrid experiences digital coverage, livestreams, fan interaction, and visually appealing formats will be attractive for fans, sponsors, and talent scouts alike.

295 **Müller:** I believe that we as tournament organizers must grow innovatively alongside these trends. Who would have thought ten years ago that influencers would create such a buzz? We will keep an eye on the digital innovation market and look at what could be suitable for our tournament. With Nina and her team, we are already in a great position, and we want to actively support further development. I am advocating for including an innovation budget in our planning for 2025.

296 **Musso:** Over the next five years, youth sports events could become significantly more interactive and accessible through digital innovations. Technologies such as augmented reality, artificial intelligence, and mobile apps will play a central role in engaging fans and enhancing the overall experience.

297 **Nikic:** I believe there will be more real time statistics in youth football. Information will be exchanged through apps.

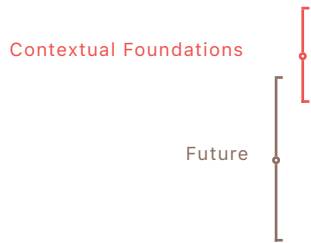
298 **Jakic:** In the next five years, artificial intelligence will transform the fan experience in youth football. AI will automatically recognize players, link their social media accounts such as Instagram or TikTok, and create personalized content like highlight videos or statistics. Fans could follow players directly from livestreams or purchase their jerseys and shoes with one click, allowing players to



earn commissions. However, data protection laws will make it difficult for organizers like the MTU Cup to monetize image material. The added value will instead come from high social media engagement, broadcasts on public television, or partnerships with major media outlets to attract sponsors for banner advertising. These developments will make youth football more commercially viable and globally attractive.

299

Experts of Participating Youth Teams:



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Brosamer: I believe the first changes will take place in professional football, as there is still a lot of catching up to do even at that level. In the long term, I imagine a platform that provides fans of a club with access to ticketing, merchandise, a reward point system, news, videos, and much more this kind of central hub could be adapted to youth tournaments as well.



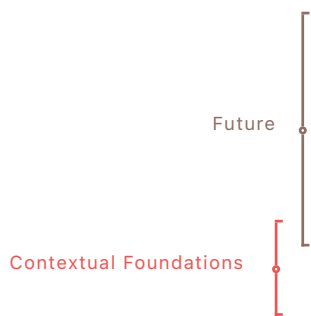
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Heseltine: It could be possible to conduct virtual meet and greet experiences with players and have voting for player and goal of the match through digital technology. This would bring fans closer to the players and foster participation during the event.



302

Unsworth: As digital technologies become more accessible, I expect features like real time statistics, live tactical data, and virtual fan engagement tools to become standard, even at youth level. Tournaments like the MTU-Cup could introduce personalized digital profiles for fans and allow them to interact with highlights, data dashboards, or fan zones in real time.



303

Playa: We'll likely see hybrid experiences a combination of physical and digital engagement. Youth tournaments could adopt more gamified systems, personalized fan experiences, and smarter event coordination; apps that guide the fan journey, real time personalized content and interactive games that reflect the spirit of youth sport all while remaining accessible and child friendly. Still, the priority should always remain on playing football, making memories, and enjoying the moment.



304

Jamet: As in any other industries, digital tools will become more and more widely used, helping to involve spectators and other stakeholders and creating better fan experiences. Organizers might increasingly rely on such technologies to enhance events.



305

Ryan: Live streaming in HD, interactive fan experiences,

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giant scoreboards for replays, and a sound system synchronized with digital screens will shape the next five years. Voting and inclusive fan engagement tools will ensure that everyone feels part of the experience.

Future

306 **Uygur:** In five years, I imagine automated livestreams, more cameras for capturing highlights, and a download section for fans to access media.

307 **16. Are there any other aspects regarding digital innovations and fan experience that you would like to add, either in relation to the MTU-Cup or in general, that we haven't covered yet but you consider important?**

308 **Experts as members of VfB Friedrichshafen (MTU-Cup Organizers):**

Opportunities

309 **Schwedt:** ~~Keep your eyes and ears open. Think outside the box.~~ Look at other events, even beyond the world of sports. Identify and engage multipliers who can help spread ideas and innovations.

Implementation

310 **Röhm:** A clear content strategy before the event, including a hashtag concept, a dedicated content team, and communication guidelines for clubs and participants.

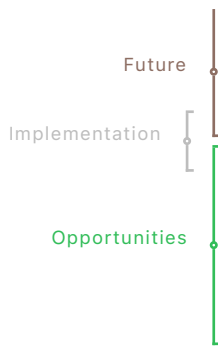
Opportunities

311 **Musso:** Augmented reality glasses for an immersive fan experience: EintrachtTech, the innovation department of Eintracht Frankfurt, has run pilot projects using AR glasses. These allow fans to experience the game from new angles and view real time information such as player statistics. AI powered chatbots for personalized fan interaction: Arsenal London developed a chatbot called "Robot Pires" that delivers personalized content to fans via platforms such as Facebook Messenger and Telegram. Fans can interact with the bot to receive match info, player updates, and statistics.

312 **Nikic:** ~~I do not have any additional aspects to add.~~

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313 **Jakic:** The collection of raw data such as video material and player statistics is becoming increasingly important to create added value for fans through AI for example, in the form of entertaining content or purchasing incentives. For the MTU



Cup, a gamification strategy is suggested: fans could collect points via social media (e.g., by posting with #MTUCup), which they could redeem for exclusive content like highlight videos. Crowdfunding campaigns or local sponsors could help finance livestream cameras. In the long term, partnerships with talent agencies could help attract scouts and position the MTU Cup as a global platform for emerging talent. These approaches would help unlock the untapped potential of youth football by maximizing both talent visibility and fan engagement.

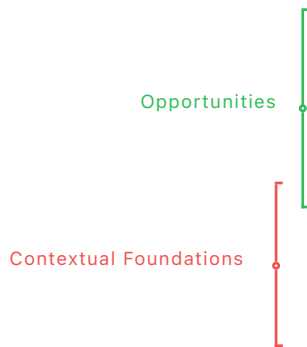
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Experts of Participating Youth Teams:



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Brosamer: I envision the first major steps still being taken at the professional level, as there remains significant room for improvement even there. In professional sports, I see the future in platforms that combine services for fans: ticketing, merchandise, loyalty programs, news, videos, and more a comprehensive digital fan hub. This could eventually serve as a blueprint for youth tournaments like the MTU-Cup.



316

Playa: One idea which comes to my mind would be to create digital collectible cards of players, with stats and photos updated live during the tournament similar to a mix between Panini stickers and Pokémon cards. Kids could trade them digitally and keep memories of the event in a fun, personalized way. But above everything, digital innovations should be used as tools to amplify, not replace, the core values of youth football: teamwork, enjoyment, and development. Their role is to support human connections, not interfere with them.



317

Jamet: ~~It seems to be quite complete.~~

318

Ryan: Touch screen entertainment around the stadium. Live feedback from players and coaches on screens. Ex Players and coaches speaking about past experiences to crowds and players. Tournament merchandise for the fans, souvenirs.

319

Uygur: Additional important aspects include a virtual fan zone and free tournament apps.