

Modernizing Sport to Foster a New Active Generation

Becoming a Frontrunner
in Digitalized Sports and Exercise



ESPOO
ESBO



Co-funded by
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Coordinated by The City Of Espoo, Finland

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Co-Funded By The European Union

Sport Pilot Projects & Preparatory Actions 2022



Introduction

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MODERNIZING SPORT TO FOSTER A NEW ACTIVE GENERATION

Dear reader,

This report outlines our updated understanding of the digitalization of sports and exercise. Through pilots, interviews, surveys, workshops, and research, we've developed a set of steps to guide other cities on this journey. 11 pilot projects have been carried out, aiming to lay the groundwork for future hobbies and activate Finnish, and ultimately European, youth.

The range of projects has been broad, with experiments happening in areas such as digitizing swimming instruction and esports organizations. We opted for a pilot-driven approach because we ultimately wanted to provide residents and organizations with a genuine opportunity to participate, influence, and change how cities approach digitization in the context of sports.

This resulted in eleven experiments, the results, and lessons of which are discussed in this report. We will go through each pilot project and its results individually, followed by a reflection at the end on the role the city should play in promoting the digitization of sports and

esports in the future. The experiments provided valuable learning experiences and opportunities to explore new phenomena, but the goal, of course, is to create something genuinely sustainable that will continue to engage children and youth in the future.

We wish you a pleasant journey into the world of digitizing sports, exercise, and esports!

Kimmo Leinonen & Oona Koivula

Table of Contents

Introduction	3	Pilot Projects	20
Starting Point	6	Hydrohex	21
Keywords	7	Heimo Esports.....	26
The Espoo Story.....	8	CSE Entertainment	30
Aligning Modernizing Sport to Foster a New Active Generation with The Espoo Story.....	9	SocialSports.....	33
Resident-Centric Approach.....	9	Finnish Paralympic Committee	37
Pioneering Innovation	9	Cityspotting.....	41
Promoting Equality and Fairness	10	RoundsGG	44
Impact on Community Development.....	11	MARKED.....	48
Project Overview.....	12	Cave Entertainment.....	51
Modernizing Sport to Foster a New Active Generation...	12	Rehaboo!.....	54
Project Events	13	The Finnish Esports Federation	57
Engaging European Youth through Major Events	13	Espoo in 2024.....	60
Knowledge Sharing through a Three-Part Webinar Series	14	Strategic Guidelines for Promoting Digitalizing Sports and Exercise in Cities	63
International Network to Advance Esports.....	14	Entry-level: Building Competence.....	65
Youth Workshops for Direct Engagement	15	Understanding local ecosystems	65
Gathering Feedback for Service Improvement.....	15	Understanding Technical Requirements for Digital Exercise, Sports, and Esports.....	66
Benchmarking Europe	16		
Pilot Project Applications	17		

Intermediate level: Support Mechanisms 67

Adapting Existing Structures to Incorporate Esports and Digitalizing Sports and Exercise.....	67
Facility Solutions	68
Esports Facilities	68
The digitalization of sports and exercise in general facility planning.....	70
Grant Practices	72
Co-developing	74
Community is everything!	74

Advanced level: City as a Proactive Actor 76

Proactive action means strategy.....	76
--------------------------------------	----

The key to scalable success lies with national leadership 78

Relevance to Traditional Sports	78
Addressing Regulatory Challenges.....	79
The Unique Nature of Esports Federations	79

Responsibilities Between Public and Private Entities in Digitalizing Sports and Exercise.....80

The Role of Public Entities: Nurturing Grassroots Engagement.....	80
The Importance of Game Education	81
The Role of Private Entities: Driving Innovation and Business Development.....	82
Conclusion: A Symbiotic Relationship for the Future	83

References84

Starting Point

Sport is undergoing radical change, as digitalization is growing, and sport is expected to cater for increasingly individual needs. New types of activities and sports are emerging and causing astonishment in the traditional sports field. These new sports struggle to find their place in the traditional sports framework. At the same time, the activity levels and health of the majority of the world's teenagers is dropping (World Health Organization 2019). Sports and exercise are becoming increasingly digital, as existing activities incorporate digital elements, such as wearable technologies and software solutions. Cities need to reinvent themselves to serve their residents, companies, and associations in the best possible way.

Esports is a good example of a youth-driven phenomenon, which is widely viewed as a non-sport because of its perceived sedentary features. Mental and physical coaching is a crucial part of esports, and its ability to reach the youth all around the world should not be under looked. According to Gamer Barometer (2022) over 76% of youth aged 10–19 play digital games weekly or more frequent. In this project we have aimed to recognize these new types of activities and capitalize their potential in activating youth and other groups of people. Another big phenomenon we have identified around the digitalization of sports is exercise gaming and other digital solutions.

Before the project, we examined our own role as a city transforming within the digital sports context. We noticed that the city struggles to recognize and effectively support self-driven, loosely affiliated phenomena that don't



squarely fit into the realm of just sports and fitness. Digital solutions and phenomena, such as Pokémon Go, often fall outside the city's scope of operation. For instance, Pokémon Go, which gained immense popularity among young people and prompted millions of them to walk significant distances daily, was met with a fundamentally negative stance towards physical activity involving digital devices and screens. For this reason, the guiding principle of this project has been that there is power in the youth; if a phenomenon originates from or is important to the youth, it is valuable for the city to engage with it and foster active, participatory young people.

Another problem that we have faced is the lack of structures in the context of emerging sports. Cities around the world have a strong tradition in supporting traditional sports clubs financially and in other ways. We wanted to explore ways to include emerging sports in the local sporting infrastructure and ecosystem with the aim of increasing the outreach of sports. Our message is that sports and well-being belong to everyone. These can be pursued in a variety of unique ways, tapping into one's own interests.

We also wanted to explore the potential of new sports and esports in creating more inclusive and accessible activities. For instance, exercise gaming and virtual reality solutions can provide experiences in physical activity for individuals with mobility limitations that would otherwise be impossible. Digital solutions can offer physical activity as a byproduct for those who might not otherwise engage in traditional forms of exercise.

Keywords

Exercise gaming: A form of digital gaming that combines physical exercise and video gaming (Kari 2017, 1).

Esports: Esports, short for electronic sports, refers to competitive gaming using technology. Esports can be practiced both in team and individual formats, depending on the game and game mode (The Finnish Esports Federation 2021).

Gaming: Digital gaming is a hobby that has been steadily growing in popularity in Finland. In 2018, 88.1% of Finns aged 10–75 were actively gaming, meaning they played at least once a month or more frequently (The Finnish Player Barometer 2018). (The Finnish Esports Federation 2021)

Digital culture: In this context, digital culture refers to the cultural practices, norms, and values that emerge from the widespread use of digital technologies, particularly the internet. It encompasses the ways in which digital tools and platforms shape human interaction, communication, as well as the creation and dissemination of content. Digital culture influences how people connect, share information, and form communities, often transcending geographical and social boundaries. It includes phenomena such as social media practices, online communities, digital art, video games, esports, gaming culture, and the evolving dynamics of privacy and identity in the digital age.

The Espoo Story

The Espoo Story is the City's strategy. The Espoo Story, the related cross-administrative development programs and the goals for the council term are always updated at the start of a new council term. The current council term runs from 2021 to 2025.

Espoo's vision is that the city is a networking point comprising five urban centers. As a responsible and humane pioneer, Espoo is a great place for everyone to live, learn, work, and pursue entrepreneurship. In Espoo, residents have the power to make a real impact.

Espoo's Values and Operating Principles are the following:

- **Espoo is Resident- and Customer-Oriented**

Smooth everyday life is important in Espoo. The best resources in Espoo are its residents, communities, and companies. Active involvement of residents in the development of our services and our comprehensive cooperation with partners ensure effective services that meet the needs of the residents.

- **Espoo is a Responsible Pioneer**

We are broad-minded, creative, and open, we challenge the status quo and have the courage to do things in a new way. Being a pioneer involves utilising research and international experience, organising experiments and knowing how to deal with possible failures. We develop Espoo in an economically, environmentally, socially, and culturally sustainable manner.

- **Espoo is Fair**

We act openly and fairly and treat people with equality, humanity and tolerance.



Aligning Modernizing Sport to Foster a New Active Generation with The Espoo Story

With the “Modernizing Sport to Foster a New Active Generation” EU project we have grasped onto the themes of The Espoo Story. The project not only addresses the immediate goal of increasing physical activity among Espoo residents but also aligns with the broader strategic objectives outlined in The Espoo Story. It promotes innovation, inclusivity, sustainability, and community engagement, making significant strides towards enhancing Espoo’s identity as a responsible, innovative city.

Resident-Centric Approach

We decided to take on a pilot project driven approach because of the city’s vision of a resident-centric approach. These pilot projects have evolved around the open proposals from all Espoo residents, businesses, organizations, sports clubs etc. The project has emphasized a collaborative approach to urban development; integrating resident feedback and ideas into the development of innovative solutions can lead to increased activity and commitment.

Through the pilot projects, Espoo promotes co-creation — a process where stakeholders collaborate in designing and implementing solutions. This approach ensures that services meet the diverse needs of Espoo’s population,

enhancing overall community well-being. We have strived to convey the city’s message as genuinely and effectively as possible:

Young people and their interest’s matter.

Pioneering Innovation

Espoo distinguishes itself as a city at the forefront of innovation, actively embracing new ideas and practices across various sectors. The project aligns with this spirit by exploring the transformative potential of digitalization in sports and recreation. By leveraging international insights and research, Espoo seeks to redefine traditional approaches to sports and exercise, fostering a culture of experimentation and continuous learning. This innovative mindset is crucial for adapting to evolving societal needs and enhancing the city’s competitiveness on a global scale.

Esports offer a global platform that enhances the city’s brand and positions it as a hub for major events. By profiling the city as an esports destination, it increases its attractiveness and competitive edge on the global stage. This not only brings economic benefits but also fosters a sense of community and belonging among the youth, reducing the risk of marginalization.

The project aimed to explore and exploit the transformative power of digital technologies in sports and recreation. By integrating digital tools and platforms, such as esports

and digital solutions in traditional sports, Espoo seeks to enhance accessibility, engagement, and effectiveness in promoting physical activity among its residents, particularly youth. We have strived to promote Espoo's vision of pioneering innovation and being brave in trying new ways to activate our residents:

Espoo is bravely exploring the possibilities of digitalization.

Promoting Equality and Fairness

A core value of Espoo is fairness, characterized by openness, equality, and respect for all individuals. Through initiatives that promote digital sports accessibility, the project supports Espoo's commitment to social equality. By providing inclusive recreational opportunities, regardless of background or ability, Espoo ensures that every resident can participate fully in community life. This inclusive approach not only enriches individual experiences but also strengthens social cohesion within the city.

These pilot projects have been all evaluated on their ability to take on Inclusiveness: All pilot projects have underlined their ability to engage people from all backgrounds and the awareness level of potential challenges and factors causing homogenization of target groups, and measures taken to actively prevent them.

One of the key focuses of the pilot projects is to enhance accessibility. By leveraging digital solutions

and technologies, such as esports and exercise gaming, Espoo aims to overcome physical barriers that might otherwise prevent certain individuals from participating in traditional sports activities.

Engaging with gaming culture allows the city to reach out to its youth through a medium they are passionate about. By integrating educational initiatives into gaming, the city can teach valuable digital and workplace skills, making youth more employable and reducing the likelihood of social exclusion. Gaming communities, which are not bound by geography, offer young people the opportunity to find their social groups, thus further preventing marginalization and fostering a sense of belonging in a digital age.

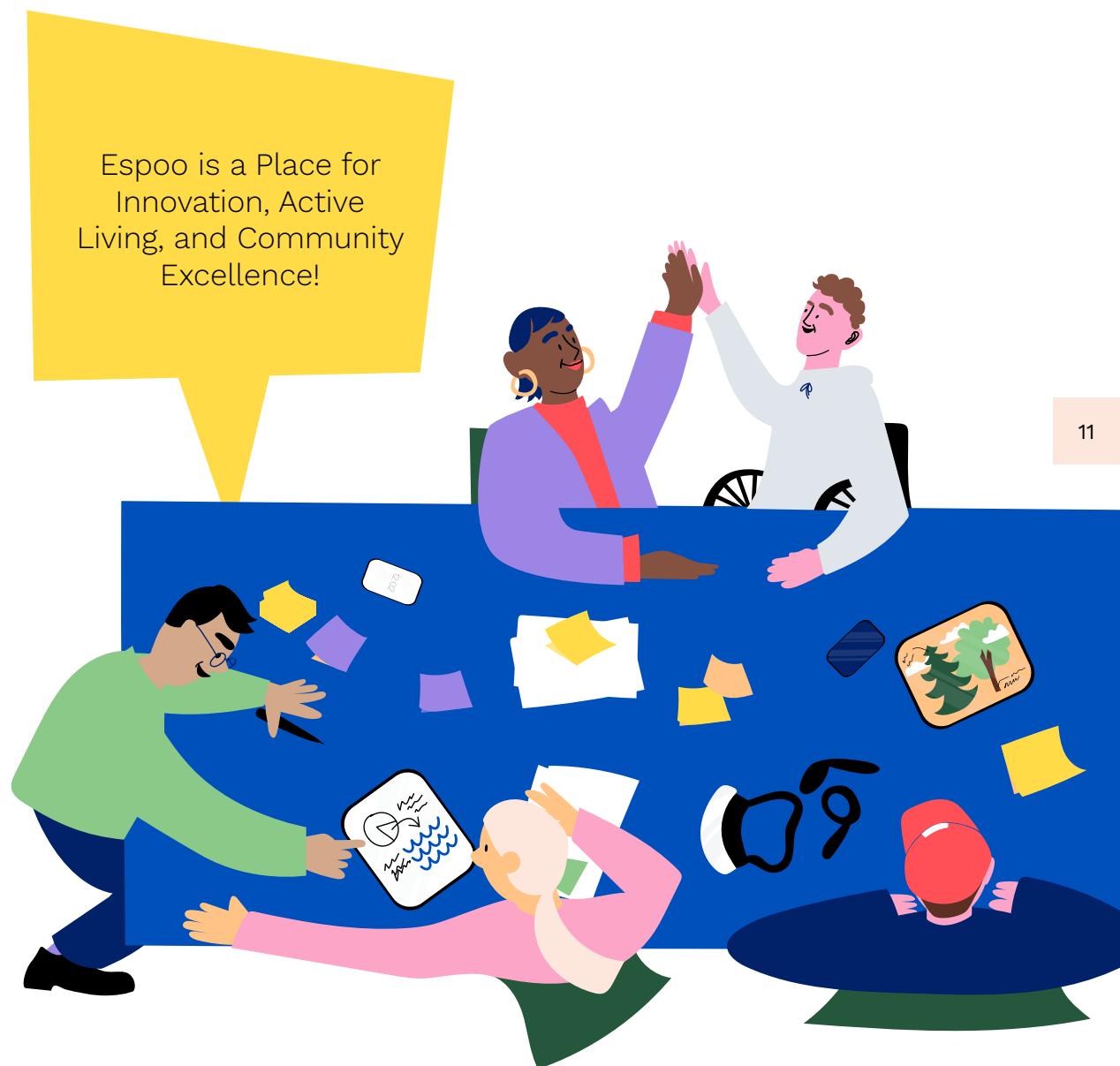
Espoo is a proactive operator in making (e)sports safe and welcoming for everyone!

Impact on Community Development

The project's multifaceted approach to digital sports and recreation underscores its significant impact on Espoo's overall development. By fostering active living and community engagement, the project enhances the city's attractiveness as a place to live, work, and innovate. Moreover, by involving local stakeholders in the co-creation of digital sports initiatives, Espoo strengthens partnerships and empowers residents to actively shape their urban environment.

Exercise games can significantly boost physical activity, promote social interaction, and enhance community cohesion. These games can break down social barriers, foster inclusivity, and serve as platforms for collaboration with businesses. Their language-neutral nature also makes them an excellent tool for integration, ensuring accessibility to all, including immigrants and those with different linguistic backgrounds.

In essence, "Modernizing Sport to Foster a New Active Generation" embodies Espoo's forward-thinking vision and values. By leveraging digitalization to enhance sports and recreation, the project not only promotes physical health but also nurtures a vibrant and inclusive community. Through innovation, inclusivity, and sustainability, Espoo continues to set a benchmark for urban excellence and resident satisfaction.



Project Overview

Modernizing Sport to Foster a New Active Generation

Modernizing Sport to Foster a New Active Generation is a project on digitalizing sports and physical activities, co-funded by the European Union PPPA (Pilot Projects and Preparatory Actions). It was coordinated by the City of Espoo's Sports and Exercise Unit. The project began in May 2022 and ended in August 2024. It involved close cooperation between operators in the Sector for Economic Development, Sports, and Culture and with education operators.

The objectives of this project were:

- 1) Increase physical activity among Espoo residents, especially children and youth.
- 2) Increase the city's expertise in the digitalization of sports, exercise, and esports.
- 3) Support the activities of clubs and local actors in the field of digitalization.

The project's objective was to lay the foundation for the recreational activities of the future. New technologies and digital services give rise to new forms of physical activity, recreational practices, and phenomena. The aim was and still is to improve the recreational opportunities of municipal residents, provide support to sports and exercise

operators for the digital transformation and increase the activity of young people by utilizing new phenomena.

In a nutshell, the main objective was to create a foundation for the future of sports, emerging sports, and new ways of activity (e.g., esports) in Espoo and ultimately in all of Europe. Cities as well as other entities need to improve their understanding of the effects of digitalization and the major changes sports and exercise is undergoing.

The perspective through which we view digitalization must be turned upside down to avoid becoming passive in the face of this phenomenon. Digitalization appears in many ways as a passive force, as screen time can increase physical inactivity and lead to various health problems and social issues. However, when utilized correctly, digitalization can also be an absolute asset and an effective tool: We can engage more diverse groups of people, eliminate geographical barriers between individuals through digital means, and introduce everyday physical activity to places that would otherwise be inactive. These are just a few mentions of the opportunities that digitalization brings to sports and exercise. This has been the guiding principle throughout the entire project.

This project involved carrying out eleven pilot projects that combined digitalization with sports and exercise. The pilots took place in Espoo and were relevant to the residents of Espoo. Proposals for pilots could be submitted by individual residents, companies, associations, or the city organization. The target groups of the project were all residents of Espoo, companies, associations, and operators whose activities touch upon sports, exercise and digital phenomena.

Project Events

Engaging European Youth through Major Events

The project hosted and participated in various events focused on sports, esports, and exercise gaming. Highlights include international esports events like Elisa Masters Espoo 2022 & 2023 and Assembly Gaming Day 2023 & 2024, as well as student-centered activities such as School Action Day 2023, which was a key event for the European Week of Sport in Finland. These events have played a crucial role in promoting exercise gaming and esports among the youth.

Photograph: Oona Koivula



The Elisa Masters esports event in Espoo in 2023.

Knowledge Sharing through a Three-Part Webinar Series

The project organized a three-part webinar series to share insights and outcomes from its pilot projects. A notable webinar featured a keynote on "Inclusivity in Esports" by Maria Ruotsalainen from the University of Jyväskylä. The series aimed to disseminate knowledge on digitizing sports and exercise, fostering international collaboration with an audience of around 80 people from over 10 countries. This initiative also established important networks for future European-wide collaborations.

International Network to Advance Esports

Six international online meetings were successfully conducted with participants from 11 European cities: Espoo, Stockholm, Odense, Jönköping, Oslo, Rotterdam, Copenhagen, Gothenburg, Paris, Jyväskylä, and Katowice. These meetings involved 26 professionals discussing topics such as enhancing local esports ecosystems, addressing funding challenges, and promoting equality in esports. Valuable knowledge exchanges occurred, setting the stage for future collaborative efforts in the esports sector.



Banner for the project's webinar series.

Youth Workshops for Direct Engagement

The project organized two youth workshops, including one in collaboration with "The Finnish model for leisure activities." Approximately 25 young participants engaged in discussions about hobbies, leisure activities, physical exercise, sports, gaming, and esports. These workshops provided insights into youth perspectives, contributing to a better understanding of their needs and interests in digital and recreational activities. Youth were not only the target group in this project but were also engaged as employees through short-term employment and work practice programs.

Gathering Feedback for Service Improvement

Feedback from larger groups of young people was collected at various events organized by the project and its partners. Events such as the ESPA Iso Omena Cup, Innokas 2023, and Rantaraittipäivä 2023 were utilized to gather suggestions and ideas from thousands of visitors. This feedback has been instrumental in refining and enhancing Espoo's services related to digitalizing sports and exercise, esports, and gaming, ensuring they align with the evolving interests of youth.

Photograph: Oona Koivula



The project's final seminar in Espoo in August 2024.

Benchmarking Europe

The project involved benchmarking other European countries. Potential visitation sites were sought where something innovative, surprising, or educational was done in the field of digitizing sports or esports. This proved to be a challenging task, because although Europe has an inspiring array of grassroots activities, they are often hidden gems for foreigners to uncover.

Luckily, we found some very fascinating examples. International visits were conducted to 1) Copenhagen, Denmark, 2) Jönköping, Sweden and 3) Barcelona, Spain. The themes were divided among the destinations as follows:

1) Copenhagen, Denmark

- Esports club activities
- Emerging traditional sports and esports in city's sports facilities
- The city's active participation in the esports ecosystem
- The city's support functions regarding the esports ecosystem and the digitization of sports and athletics
- Social Gaming: Gaming activities aimed at enhancing the social well-being of children and youth

2) Jönköping, Sweden

- Mega events on esports: The city's role on esports events and the effects of events on local esports ecosystem
- Inclusivity in gaming and esports: Female Legends' work towards better gaming culture

3) Barcelona, Spain

- Barcelona Sports Hub: Public-private initiative to spark the innovative scene of the digitalization of sports and exercise
- Exercise gaming and sports technology solutions

The project also conducted benchmarking within the Finnish context. Visits were made to various places including Jyväskylä, Tampere, Turku, Helsinki, and several sports institutes in Finland. Visits and presentations were conducted both proactively and upon request. The goal was to engage with international and national stakeholders in the fields of sports, exercise, and esports, including businesses, organizations, associations, federations, and similar entities. During these meetings, information about the project and its results was disseminated, and ideas for the future of digitalizing sports and exercise were collaboratively developed.

Pilot Project Applications

The project evaluated a total of 28 applications, out of which 11 (39%) were selected for implementation. Anyone could propose a pilot project: individuals, associations, sports federations, sports clubs, city internal actors, companies, and other entities. The only required aspects were that 1) the pilot project had to address digitalization and sports or esports in some way and 2) it had to involve Espoo residents either directly or through online means. There were no geographical restrictions, so international applications were also accepted.



The evaluation focused on the following aspects:

- **Scale / Effectiveness**
Pilot project's ability to reach and make an impact on the target audience and the possibilities for future development.
- **Compatibility**
Pilot project's compatibility with the objectives and operations of the overall project.
- **Innovation**
Pilot project's level of implementing new phenomena and innovative solutions to create foundation for future activity.
- **Inclusiveness**
Pilot project's ability to engage people from all backgrounds. The awareness level of potential challenges and factors causing homogenization of target groups, and measures taken to actively prevent them.
- **Budgeting**
Pilot project's ability to grasp the project's financial entirety. Precision and efficiency in budgeting.

Pilot project applicants could apply for funding of up to 20,000 euros to implement their innovations. In total, 142,689 euros were granted for the pilot projects.

The project hosted two separate pilot project application rounds, the first in Spring 2023 and the second in Autumn 2023.

After the first application round, we made some changes to the process. Initially, all applications were evaluated against each other, which created challenges when comparing ideas with a €5,000 budget to those with a €20,000 budget, putting some applicants at a disadvantage. We also noticed that many applicants submitted pilot applications close to the €20,000 maximum. In the second round, we created separate categories for applications under €10,000 and those between €10,000 and €20,000. This change had a positive impact, as more pilot applications under €10,000 were received in the second round. In the second round we received 12 applications which budgets were under €10,000 compared to the two applications in the first round.

Pilot Project	Amount Granted
CSE Entertainment	€19,680
SocialSports	€8,500
Hydrohex	€19,887.13
Heimo Esports	€20,000
Cave Entertainment	€8,000
Cityspotting	€9,627.07
MARKED	€14,135
Finnish Paralympic Committee	€20,000
Rehaboo!	€9,860
RoundsGG	€9,800
Finnish Esports Federation	€3,200
TOTAL	€142,689.20

Table 1: Amounts allocated for the implementation of pilot projects.

Before the pilot project application rounds were opened, stakeholder and situational mapping were conducted to understand the potential needs for experiments in the field. The mapping included five online surveys, each targeting different groups and addressing different questions. The surveys were as follows:

- 1) Survey for municipal residents on the digitalization of sports and exercise
- 2) Survey for esports organizations on cooperation with cities
- 3) Survey for companies on the digitalization of sports and fitness
- 4) Internal survey for the City of Espoo on the level of digitalization and attitudes
- 5) Survey for traditional sports clubs on the level of digitalization

These five surveys gave us a relatively good understanding on the level of digitalization among different stakeholders, their needs regarding digitalization and their attitudes towards ongoing change. We used this knowledge to shape the pilot project application rounds objectives, evaluations, and implementation.



Pilot Projects

In this section we'll go through the eleven pilot projects on digitalization of sports and exercise.

The following Pilot project were selected on the first pilot project application round:

- 1) Hydrohex
- 2) Heimo Esports
- 3) CSE Entertainment
- 4) SocialSports

The second application round consisted of the following pilot projects:

- 1) Finnish Paralympic Committee
- 2) Cityspotting
- 3) RoundsGG
- 4) MARKED
- 5) Cave Entertainment
- 6) Rehaboo!
- 7) Finnish Esports Federation

The pilots can roughly be divided into four different categories, as follows:

- 1) Exercise gaming
 - CSE Entertainment
 - Cave Entertainment
 - Rehaboo!
- 2) Esports
 - Heimo Esports
 - RoundsGG
 - Finnish Esports Federation
- 3) Software solutions
 - SocialSports
 - Cityspotting
 - MARKED
- 4) Digitized sports and exercise
 - Hydrohex
 - Finnish Paralympic Committee

This categorization is by no means perfect or set in stone: the idea has been to help city operators to better understand the kinds of themes that the phenomena of digitalizing sports, exercise, and esports might relate to, even loosely. Many of the pilot projects could naturally fit into multiple categories, and there could be more of these categories.

Hydrohex

About

Hydrohex is a Finnish start-up that has developed virtual water exercises that many visitors of Finnish indoor pools may have seen. Hydrohex is a platform to virtualize your pool services. They provide customers with the content, software, and tools to offer new virtual aqua fitness services. There is no need for staff to choose and play virtual classes because of automatic video playback. In the past few years, Hydrohex has also developed digital solutions for swimming lessons to facilitate interaction between instructors and pupils.

Background information

According to a 2022 study by the Finnish Swimming Teaching and Lifesaving Federation (FSL), only 55 percent of sixth graders were able to swim the distance according to the Nordic swimming proficiency definition, compared to 76 percent in the 2016 report. That means a 21% decrease in just six years. It was clear that something needs to change to stop this trend.

Unlike many other sports, swimming and other water sports have a relatively high participation threshold due to the need for sufficient swimming and water safety skills to ensure water safety. Even though the digitalization of education has been a notable trend starting from the

Photograph: Hydrohex



A group using Hydrohex's digital tool as part of swimming education.

2000s, swimming lessons have not kept up with the digital development. The pilot project brought digital materials into schools' swimming lessons.

Many children and young people go swimming with their school. Primary school pupils in Espoo take about

four swimming lessons per year. It emerged that it has become increasingly common in Espoo's school swimming sessions for certain children to have no other exposure to swimming besides these sessions. This phenomenon is particularly noticeable among children with immigrant backgrounds, whose proportion in the groups has also increased.

As such, it is important that the time reserved for the lessons is used as efficiently as possible. We have a growing number of students who do not yet speak or understand Finnish. Additionally, there are significant differences in skill levels among student groups, which means that the limited time for swimming lessons causes inequality and various challenges in teaching. Hydrohex can help tackle these issues because the teaching is visual, and the content is configured by the teacher themselves.

Before the pilot project, the City of Espoo had already implemented Hydrohex's virtual aqua fitness workouts into the city's indoor swimming pools. This has been extremely popular amongst the swimming pool users. The classes gather an impressive number of participants, indicating that digital swimming instruction is of great interest to people. Before the pilot project, no experiments had been conducted regarding swimming instruction for schoolchildren, so the pilot was an interesting expansion in that direction.

Pilot Project Operations

In the pilot project, Hydrohex developed materials for swimming lessons to be used by the City of Espoo instructors working at Leppävaara Indoor Swimming Pool. The individual needs of swimming instructors were considered, and the videos for the lessons were edited according to their wishes.

The aim of the pilot project was to help swimming instructors save time by allowing them to adjust the order of the videos and thus build their own sets of instructional materials. Hydrohex also wanted to improve the effectiveness of limited school swimming lessons and further improve the chances of learners with different language backgrounds and special needs to learn how to swim. The hypothesis of the pilot project was that a more user-friendly teaching support system would lead to reduced disruption, improved communication, and enhanced job satisfaction for swimming instructors.

The pilot project studied if the interaction between the instructor and the pupils can be improved in this way, as better interaction contributes to the quality of the lessons and the amount of active learning time. For this purpose, the pilot project monitored the swimming lessons of school groups.

Data collection for the pilot project was conducted by measuring the use of time during teaching sessions 1) without Hydrohex, 2) with the basic Hydrohex service,

and 3) with configured lesson plans. In addition to this, feedback discussions were held with swimming instructors, and they had the opportunity to request changes to the configurations at any time. As the pilot project progressed, the swimming instructors requested that there be only one type of configured package, which they could collectively request changes to. The project began in February and concluded in September. Data collection focused on the period between March and May, after which the data was processed and analyzed.'

A total of 51 quantitative comparison units were generated (51 measured school swimming groups), and four qualitative measurement units were created (four feedback discussions or meetings). In addition to this, the product specialist actively collected feedback and observations from swimming instructors throughout the project, even outside of these official discussions.

Results

As a result of the project, the usage of the service experienced explosive growth and became an integral part of the daily routine for the swimming instructors at Leppävaara Swimming Hall. According to feedback from the instructors, the service streamlined swimming lessons, facilitated communication with children who speak languages other than Finnish as their native language, and positively impacted the well-being of the swimming instructors. Measurement results indicated that the use of Hydrohex reduced children's distractions and allowed for

Photograph: Hydrohex



The digital display tested in the pilot project enhances swimming instruction for schoolchildren by providing visual and language-neutral support content.

increased time spent on instruction and active practice. The feedback from the instructors was consistent with these findings.

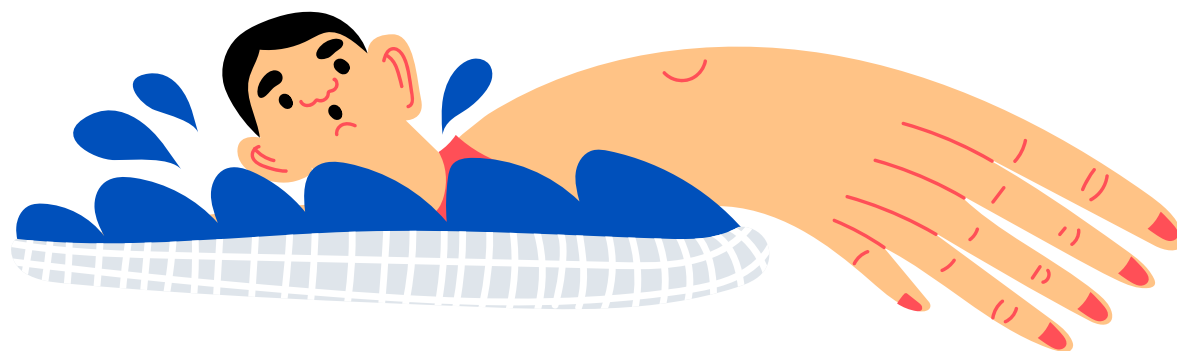
According to the measurements, the same learning outcomes were achieved in school swimming lessons without Hydrohex in 8 x 40-minute teaching sessions, and with Hydrohex in only 6 x 30-minute teaching sessions.

The measurements performed during the pilot project showed that the Hydrohex digital solutions reduced the number of disruptions during school groups' swimming lessons. More time was spent on providing instructions and practicing swimming when Hydrohex was used during a swimming lesson. This means that the swimming lesson participants received more instruction and were able to do more practice repetitions compared to those who did not have access to video materials.

Feedback from the pupils showed that using video materials for swimming lessons is pleasant and stimulating, which makes it easier to observe the movements and skills. Video material offers an underwater view. This allows the student to generally find it much easier to mirror movements to those of their own body, rather than attempt to mimic the teacher's instructions on dry land.

Pupils who do not speak Finnish or Swedish as their first language felt that the video materials were significantly helpful in understanding the key parts of the exercises. The Hydrohex swimming lesson materials were also used to hold swimming lessons for refugee schoolchildren from Ukraine. The language neutrality of the digital videos received praise from the pilot participants.

The swimming instructors who participated in the Hydrohex pilot project said they had benefited from a digital solution. Improvement was seen in occupational wellbeing, for example, which is a noteworthy development, considering



the labor shortage in the field and the stressful working conditions at a pool.

According to the feedback from swimming instructors, the calming effect of the Hydrohex learning materials reduced absences due to voice-related health problems and made it easier to provide high-quality swimming instruction. One of the goals of the Hydrohex pilot project was to reduce the stress related to swimming instructors' work and improve the equality of school groups with varying skill levels.

The pilot trial of Hydrohex received a lot of praise, especially when teaching students with special needs. The digital solution enables individuals to follow instructions from the teacher at their own pace through video guidance. This helps students with differing skill levels: some can begin practicing while others can refine their techniques by following the video instructions alongside the teacher's guidance.

During the pilot, there were also reports of cases where the display helped students with special needs to focus on tasks. For instance, when a student was able to press the controller themselves to move on to the next exercise, their motivation for practice increased.

The Sports and Exercise department has initiated talks with Hydrohex to expand its use to all swimming pools in Espoo. This expansion would enable at least 7,000 children per year to learn to swim using digital aids in Espoo.

Shortly:

- The plan is to expand Hydrohex swimming education features to all Espoo swimming pools.
- 8% reduction in disruptions during swimming lessons and an 8% increase in active time per lesson.
- Notably, non-native students and special groups reported an improvement in the quality of swimming lessons.
- Improved workplace well-being among swimming instructors.

Heimo Esports

About

Established in October 2022, Heimo Esports operates under the umbrella of the Espoo-based sports club Westend Indians. Westend Indians is a sports club community founded in 1992 and is currently one of the largest floorball clubs in Finland. Heimo was awarded the 2022 Espoo Sports Club of the Year at the Espoo Sports Gala.

Background information

Gaming and esports have become increasingly popular in recent decades, especially among children and young people. According to the Finnish Gaming Barometer (2022), around 89 per cent of Finns played digital games once a month or more in 2022. In the pilot project, Heimo focused on this phenomenon, aiming to make gaming and esports part of traditional sports club activities.

Before the pilot project there were no esports clubs or hobby groups in Espoo. There were no traditional sports clubs implementing esports. There were also no sports club owned spaces for gaming and esports.

In Finland, traditional sports have a strong history within sports clubs operated by volunteers. The activities are traditionally well-organized. Esports, on the other hand,

Photograph: Heimo Esports



Heimo Esports' gaming station at the Westend Indians match event.

has been markedly different so far, much more self-driven, business-oriented, and disorganized. Heimo wanted to “merge these two worlds”, allowing city residents to engage in both gaming and traditional sports and exercise in the same club. The goal was ambitious, as similar activities have not yet been carried out elsewhere in Finland.

Pilot Project Operations

The main goal of the project was to combine esports participation with an active and healthy lifestyle. Heimo Esports defined three key objectives to support this primary goal:

- 1) Initiating regular social esports hobby groups.
- 2) Providing educational lessons for schoolchildren.
- 3) Utilizing new digital games to encourage physical activity among youth.

Through these objectives, Heimo Esports also aimed to prevent social exclusion. Although children and young people were the primary target group of the pilot project, everyone was welcomed to participate.

Heimo Esports wanted to promote a healthy & active lifestyle in esports as part of the community. Social hobby group activities in a controlled and safe environment are a good tool to create a positive gaming culture and healthier approach to gaming. Prevention of marginalization & online bullying, especially girls/women is done by educational teaching in hobby groups and in cooperation with schools in Espoo.

In the spring of 2023, Heimo Esports kicked off their journey with a refined plan. Heimo recruited and trained new members, laid the groundwork by reaching out, sharing information, and making all necessary preparations. The

first school visits were conducted, and the initial hobby concept was launched. Feedback was collected to further develop the action plan for autumn 2023.

In Autumn 2023, Heimo Esports updated the plan and continued with essential preparations, including making key contacts and providing information. In-depth training sessions for instructors were conducted. School visits proceeded, and a second hobby concept was tested. The hobby pathway was developed based on collected experiences. Additionally, a new digital game was tested to enhance youth physical activity, and efforts were made to establish it as a permanent part of the program. The project was summarized, and conclusions were drawn to inform future steps.

In Spring 2024, Heimo Esports expanded and developed the activities of the hobby groups. Educational lessons for schoolchildren continued as planned. The organization participated in its first events, marking a new phase of engagement. Additionally, internal marketing communication was enhanced to boost awareness and support for the program.

Results

Over the course of the one-and-a-half-year project, Heimo Esports succeeded in meeting the objectives of the pilot project.

The project reached approximately 300 participants in total and carried out nine school visits. Several schools established ongoing use of the gaming space in their teaching. The exercise game increased physical activity among children and youth.

Feedback was gathered throughout the whole project, focusing on three key factors: 1) Satisfaction with the instructors' performance and teaching methods, 2) Satisfaction with the program content and 3) Satisfaction with the atmosphere and overall comfort. The overall rating from the feedback was 4/5. Initially, Heimo Esports succeeded in providing a service for which there was a clear need.

The most significant challenges were the slow pace of creating a new culture and the limited resources available. Creating a new culture is simply slow when it has previously been nonexistent.

Other types of challenges included the inadequacy of suitable facilities and the difficulty of communicating effectively, especially to the parents of participants, as many find esports challenging to understand. Due to the lack of an existing club culture, there was no traditional way



for parents to have participated in the activity themselves and thus guide their children to local club activities based on their own experiences.

As a result, Heimo Esports tested various hobby concepts and found that it was crucial to first get participants to visit and familiarize themselves with the gaming environment

through simple concepts. Heimo Esports successfully reached potential participants and aim to build more established hobby pathways in the future.

In 2023, a gaming space called Tribe Gamebase was opened in Otahalli. The space has eleven gaming computers, so visitors do not need to bring their own equipment. Gaming at Tribe Gamebase is a social activity. Participants get to make new friends and learn teamwork skills through gaming. If participants want to aim higher, Heimo also provides opportunities for goal-oriented competitive gaming and the pursuit of a professional career.

In Espoo, an esports organization that operates under the umbrella of a huge traditional sports club has been established for the first time, providing a gaming space that has enabled numerous organizations, many enthusiasts, and several schools to develop an educational environment for understanding and learning esports.

Through the project, Heimo Esports has initiated numerous discussions with Espoo's decision-makers and active hobbyists about future needs and opportunities. The operation differs in many ways from traditional club activities, making close collaboration with the City of Espoo critically important.

Shortly:

- The project engaged around 300 participants and conducted nine school visits.
- Overall satisfaction rating 4/5, with positive feedback on instructors and program content.
- Tribe Gamebase -esports space established in Otahalli, Espoo.

CSE Entertainment

About

CSE Entertainment is a Finnish exercise gaming equipment supplier. They are converting small spaces into interactive family entertainment areas that fit all ages, backgrounds, and abilities. CSE's products combine exercise and games. They operate in more than 50 countries.

Background information

Only 36% of 7–15-year-olds report meeting physical activity recommendations, which is a decrease from 38% in 2018 (LIITU study 2022). Using exercise games increases daily physical activity in school environments. Gamification also engages those who may not identify with traditional exercise. Research shows that motor skills can improve even during a short period of engaging in exercise games (Medeiros et al., 2017).

According to Mueller et al. (2011), active video games are a form of digital gaming that combines video games with physical activity, where the outcome of the gameplay is determined by the player's physical effort.

The key strength of digital exercise games lies in combining fun and utility, which for many serves as the basis for playing. (Kari 2017) Thus, games can offer players physical activity almost as a byproduct of gaming, without



Photograph: Oona Koivula

*runBEAT in the
Kameleonten Sports
Hall in Espoo.*



the player necessarily even feeling like they're engaging in exercise, thus serving as a means for some to make exercising more enjoyable. Exercise-based gaming could potentially be the deciding factor that inspires otherwise passive people to take up exercise.

Pilot Project Operations

The aim of the pilot project was to encourage everyday activity and increase independent exercises in places, which are currently usually inactive. To do so, CSE Entertainment utilized a Finnish innovation: an exercise-based game called runBEAT. runBEAT gamifies walking and running in a natural-feeling manner with the help of non-motorized treadmills.

During the project, CSE Entertainment collected user experiences from an educational institution and a sports center to gain as broad a range of feedback as possible. User data was collected throughout the pilot project, in addition to which user experiences will be collected with the help of surveys. School and sports facility staff, as well as students, were interviewed about their user experiences.

Results

The pilot project resulted in making exercise-based gaming a regular tool for increasing the physical activity of the Espoo residents. After the pilot project, Espoo immediately acquired the runBEAT exercise game, which is placed in the warm-up areas of the Kameleonten sports hall.

Now, the Espoo City Sports and Exercise Unit owns a total of three exercise games, two of which are placed in educational institutions to activate the daily routines of children and young people. Espoo has successfully integrated exercise games into its operations.

Further implementation of innovative digital and technological solutions is under development. The design guidelines for school yards in Espoo have been updated so that it considers the digitalization occurring in children and young people's world and how the change impacts being physically active. Supplementing the design guidelines for yards means that in the future, Espoo school yards will be equipped for the installation of digital, physically activating games.

Shortly:

- The pilot results convinced both the Sports and Exercise Department and the Education Department of the value of gaming exercise solutions. As a result, the city has acquired three solutions based on the pilot's success.
- Exercise gaming solutions have contributed over 2,000 hours of physical activity.
- Updated design guidelines for school yards in Espoo consider the digitalization of sports and exercise.

SocialSports

About

SocialSports is a mobile app through which anyone can participate in low-threshold sports and exercise activities or create their own activities. The application allows users to create their own activities, such as ball games or shared running sessions, for other people to see. In other words, SocialSports is like a platform for yard game culture for adults.

Background information

According to the FinHealth 2017 study, 39% of men and 34% of women met the recommendations for physical activity. However, about half of both men and women adhered to the recommendations for endurance exercise. (Finnish Institute for Health and Welfare 2024)

More than half (54%) of students at universities of applied sciences and universities do not engage in sufficient physical activity for their health. (Finnish Institute for Health and Welfare 2021)

Approximately one-third of men and one-fourth of women engaged in leisure-time conditioning activities, while 29% of men and 30% of women reported no leisure-time physical activity at all. Many adults reported doing workouts, muscle-strengthening exercises, running,



Photograph: SocialSports

SocialSports aims to revive backyard sports culture among adults as well.

jogging. Cycling was another popular activity, especially during the summer. On a typical weekday, adults spent 7–8 hours sitting, much of which was at work or at home in front of a TV, computer, or other screen. (Finnish Institute for Health and Welfare 2024)

Adult Finns seem to engage primarily in self-directed physical activity rather than in organized or guided

activities. A significant amount of time each day is spent sitting in front of digital devices. Based on this information, it was noted that a digital channel could be an effective place to inform about sports and exercise opportunities. Additionally, it could potentially facilitate the creation of low-barrier programs that also support social relationships and interactions.

Pilot Project Operations

The SocialSports pilot project lasted from the beginning of May 2023 until the end of August 2023. The goal of the pilot project was to provide a communal mobile platform for low-threshold physical activity for adult Espoo residents, thus addressing inactivity and loneliness in Espoo. SocialSports aims to meet the needs and desires of adult physical activity behavior. An additional goal for SocialSports was to test the concept on a broader scale, which hasn't been possible during the years of the COVID-19 pandemic.

The SocialSports app was marketed to the residents of Espoo during the pilot project, and three project employees were hired to organize sports activities for Espoo residents. The project was also promoted in local media and during Espoo's Beach Promenade Day.

Each project employee created 2 activities per week for the app. Therefore, there were at least 6 activities available on the app every week. This was partly intended to inspire Espoo residents to create activities themselves.

At the beginning of the project, we heavily invested in marketing, which also resulted in more downloads. Marketing continued throughout the project, except for the last few weeks.

Through the pilot project SocialSports wanted to improve people's wellbeing by providing access to more sports and exercise opportunities and opportunities to meet new people. The aim was to build a new kind of community-oriented and diverse sports and exercise culture for adults. The pilot projects operations were especially aimed at university students in Espoo, Otaniemi.

Active monitoring naturally included tracking how activities were posted on the app and how many participants engaged in them. A comprehensive monthly data package detailing all activities and participant numbers throughout the project was made. SocialSports' ranking on the App Store's Top list for sports apps was monitored to compare the app's download pace with leading fitness apps in Finland. Data was also collected from the organizers of physical activities via Google Forms and through discussions to understand how the activities were being implemented in practice.

Results

At the beginning of the project, SocialSports had approximately 800 users, and by the end of the project, there were over 1500 users, nearly doubling the app's user base. For the first time, the app featured authentically created activities that were successfully carried out. 'Authentic' in this context means that the creator of the activity had no connection to SocialSports or the immediate circle of the SocialSports team. Positive feedback was received from activity organizers about the activities that were implemented.

The most significant outcome of the pilot project is the functionality of the concept: people participated in activities both organized by others and initiated by themselves. The app attracted a commendable number of users, but the project's goals of reducing loneliness and inactivity were not widely achieved, at least not yet.

However, the pilot project also highlighted the challenges of the concept. During the first two months or so, there were no participants in SocialSports activities. Participants began to emerge gradually only in midsummer. Consequently, most of the project's activities did not materialize due to lack of participants.

In hindsight, the project could have benefited from a larger marketing budget, as many activities did not attract enough participants. Initially, the increased number of users did not translate into activity participation. However,



over the summer, people eventually dared to attend some activities and create activities themselves. The concept of the app clearly interested people, but the barrier to engaging in activities with strangers might be high.

SocialSports' pilot faced challenges in securing suitable exercise facilities. During the pilot, it was observed that the City of Espoo may not have enough open slots available for public use, as a significant portion of facilities is reserved for organized activities by clubs. This raises the question of how the city should best organize open slots for public use. Could this indirectly increase the amount of self-organized recreational activities among residents?

Shortly:

- The number of users nearly doubled, with the majority being residents of Espoo.
- Authentic sporting events hosted and attended by Espoo's residents.
- Communication challenges overshadowed the first two months of the pilot project.

Finnish Paralympic Committee

About

Finnish Paralympic Committee is a national sports and exercise organization for individuals with physical, visual, and intellectual disabilities, as well as for those who have received organ transplants or are undergoing dialysis. The Committee's mission is to develop and coordinate Finnish disability sports and physical activities, ranging from low-threshold participation to elite sports.

Background information

Approximately 15% of people have a disability, which translates to over 800,000 individuals in Finland. Among them, it is estimated that around 200,000 children and young people with special needs benefited from this project's promotion of well-being through physical activity. Still, municipalities only allocate an average of two percent of their sports funding to adapted sports and exercise. (Timo Ala-Vähälä, Communication of Sport Sciences 5/2021)

The most common barriers to sports and exercise for children and young people with disabilities include a lack of suitable sports options, insufficient equipment or aids, the costs of participation, and a lack of information about appropriate activities and facilities. (National Sports

Photograph: Ronja Määttä



The digital track wheelchair racing simulator encourages everyone to try wheelchair racing by incorporating gamification.

Council 2018) Traditional racing wheelchairs are expensive, often costing up to 10,000 euros.

Pilot Project Operations

The goal of the project was to develop a new, accessible racing wheelchair simulator that is easy to transport. The pilot project also aimed to promote equal esports, particularly for enhancing the well-being of children and youth, and supporting attitude development, awareness, and equality.

The development phase of the simulator began in the fall of 2023 with Finnish Paralympic Committee and the City of Espoo, during which other partners were also sought. The construction phase for the simulator and its software started in January 2024. The simulator was completed in April 2024 as part of a collaboration with Turku University of Applied Sciences. After the construction phase, the simulator was piloted at events in Espoo in May and June 2024.

During the first major pilot test on May 3, 2024, the target group was adults. This pilot test helped identify a few issues (Bluetooth, simulator setup) that were addressed before the next testing round, that was aimed at younger users. The second major pilot test on May 21, 2024, targeted children. This pilot was essential as it revealed that the middle support bar was too long when connected to a smaller children's wheelchair. In summary, piloting the simulator with different target groups was extremely important, as it provided various insights and significantly improved the racing simulator.

It was particularly important for the project that people with disabilities were involved in the planning and participated in the events. Paralympic Committee's extensive networks across different target groups, along with discussions with the City of Espoo, helped select events where participants could provide feedback on the racing wheelchair simulator and the project's goals.

Results

The project's goal was to develop a new, inclusive racing wheelchair simulator that is easy to transport, and this goal was achieved. The simulator developed during the project can be tried by anyone, regardless of whether they have a disability. The simulator, which uses rollers, is also easy to move, and users can track their progress on a screen in front of the simulator.

According to feedback from all involved in its development, the racing wheelchair simulator was a successful project. Feedback was also collected from various events. It was extremely important to pilot the simulator with different target groups. The racing wheelchair simulator does not operate entirely independently; it requires a person to guide and start it. This could be a development step for a new project.

Paralympic Committee developed an inclusive track wheelchair simulator that was piloted at events. The simulator features a competitive 100-meter racing

wheelchair event to simulate the challenge of the sport, as well as a more playful version suitable for all ages.

The racing wheelchair simulator developed during the project can be tried by anyone, regardless of whether they have a disability. The simulator, which is propelled on rollers, is also lightweight and easy to move, and users can monitor their progress on a screen in front of the simulator.

Traditional racing wheelchairs are expensive, often costing up to 10,000 euros. Out of the budget allocated for the material costs of the racing wheelchair simulator, 2,929.90 euros were spent, including student collaboration with Turku University of Applied Sciences. With this digital solution, the racing wheelchair simulator has become more accessible, improving opportunities for participation and inspiring people to engage in sports and exercise through esports and the digitalization of sports and physical activities. The racing wheelchair simulator has been piloted at the first events organized by the City of Espoo through this project.

Finnish Paralympic Committee invited a large group of young people to the events, and adults also had the opportunity to try the simulator. The events included participants with disabilities, ensuring a diverse and comprehensive group of testers, which helped to generate enthusiasm for the simulator among new audiences.



During the pilot phase alone, hundreds of people became aware of the racing wheelchair simulator through hands-on trials, and thousands more through communication efforts. The City of Espoo conducted extensive coverage of the project, which was also noted in the local newspaper Länsiväylä.

After the pilot project concluded, the track wheelchair simulator was featured at the free and open Paralympic Day on August 20, 2024. At Paralympic Day, attendees had the opportunity to meet athletes from Finnish Paralympic team, who were preparing for the upcoming Paris Paralympics. Finnish Paralympic Committee has expressed its intention to further develop the prototype and is currently seeking corporate partners.

Shortly:

- A new, inclusive racing wheelchair simulator created in collaboration with The Finnish Paralympic Committee, the City of Espoo, and Turku University of Applied Sciences.
- The simulator was successfully piloted in events held in Espoo in 2024.

Cityspotting

About

Cityspotting is a Finnish company that offers a browser-based game designed to gamify outdoor activities and explore different cities from new perspectives. The game map features so-called "spots," which unlock content videos as players move to these locations in the real world. Each spot contains exciting location-based information, stories, or tasks specific to that spot.

Background information

According to the UKK Institute (2024), spending time in nature positively impacts people's health and well-being. Walking is one of the most popular activities among Finns. The Natural Resources Institute Finland (2022) studied the well-being benefits of nature and found that nature-based sports and exercise is an effective tool in occupational health care, including reducing work-related stress.

According to the FinHealth 2017 study, 39% of men and 34% of women met the recommendations for physical activity. However, about half of both men and women adhered to the recommendations for endurance exercise. (Finnish Institute for Health and Welfare 2024)

Starting from these premises, we piloted a gamified nature-based sports and exercise solution. Could we



Image: Cityspotting

encourage more working-age adults, particularly recent immigrants to Finland, to engage in outdoor activities and improve their integration and well-being through an easy-to-use browser-based solution?

Pilot Project Operations

The Cityspotting pilot project 'Espoon löytöretki' (Espoo Expedition) included over 100 exciting spots scattered throughout Espoo. These spots are locations to be discovered using our browser-based mapping application. It is the ultimate Espoo exploration service for locals. The goal was to encourage Espoo residents to move around different parts of the city and enhance Espoo's attractiveness especially in the eyes of professionals coming to Finland from abroad.

The pilot project began in the summer of 2023. In the "Espoo Expedition" project, users were provided with a cultural exploration experience via a mobile device. The pilot project users included young people, students, and information technology workers from Espoo. Some users were native Espoo residents, some had moved to Espoo, and some were expatriates.

The pilot project lasted for six months from the start of distribution to different user groups. These groups could use the exploration feature for six months. The activities included compiling the exploration content, creating a website and login system, and distributing the app to different user groups. The exploration experience

was distributed entirely manually at various events to young people, adults, and families. Distribution was also managed via email and the website.

Implemented distribution points or groups:

- School Action Day 2023 event
- Hello Espoo event
- Game development students at Aalto University
- High school students involved in the Espoo Schools on the move project
- Students and staff of Laurea University of Applied Sciences

Results

The goal of the project was to gain experience using a free mobile app that encourages physical activity. The objectives were reasonably achieved: recipients of the app activated the adventure and visited the spots. However, we would have hoped for more long-term engagement.

A total of 545 user licenses were distributed. As a result of the initial distribution, users have visited various spots for outdoor activities. This has been confirmed both on-site and through reports from our app. During late autumn and early winter, explorations were very limited due to the weather, even though exploration time was still available.

The goal of the project was to gain insights using a free mobile app designed to encourage physical activity. The user-specific objectives were reasonably met, although the number of long-term, committed explorers was disappointingly low. Nevertheless, the app recipients did visit the spots. The pilot project demonstrated that efficient distribution and communication are central to success.

Shortly:

- 545 user licenses distributed for students, families, and information technology professionals in Espoo.
- Number of long-term, committed users was lower than hoped for.

RoundsGG

About

RoundsGG is a Finnish esports organization and service provider. Rounds Gaming Zone features flexible, mobile, adjustable, and top-equipped gaming stations with computers, monitors, and peripherals that can be set up in any space within minutes. RoundsGG also offers coaching, guidance, gaming events, and event production. Rounds Gaming Zone uses portable gaming tables from the Espoo-based company UNEVN OY in their operations.

Background information

'New normal' in Finnish gaming indicates the consolidation of gaming as a central part of post-pandemic life and leisure activities. Considering all forms of gaming, including occasional gaming, 98% of Finns play some form of game at least occasionally, with the proportion of 'actively' gaming individuals, defined as those who play at least once a month, comprising 89% of the surveyed population aged 10 to 75 in mainland Finland ([Table 2](#)). (The Finnish Player Barometer 2022)

The trend associated with the shift in gaming culture is evident in the growing popularity of esports and game streaming. The popularity of real-time online gaming and watching various game recordings is on a clear rise. Physical purchases of games are decreasing, and it is increasingly

Photograph: RoundGG



RoundsGG piloted the use of mobile esports facilities.

common for games to be digitally downloaded from various online platforms. (The Finnish Player Barometer 2022)

According to Meriläinen and Ruotsalainen (2023) gaming is a significant activity for recreation, entertainment, and self-independence for many young people. It reflects their initiative, self-expression, and joy from cultural experiences, but it also brings challenges such as discrimination and

Age Group	Plays digital games daily	Plays digital games weekly or more often	Does not play digital games at all
10–19	42%	76%	3%
20–29	24%	67%	7%
30–39	21%	48%	14%
40–49	25%	41%	29%
50–59	11%	20%	49%
60–69	7%	15%	68%
Over 70	7%	16%	73%

Table 2: The activity of playing entertainment games across different age groups (The Finnish Player Barometer 2022).

issues related to the hyper-commercialization of gaming culture. Gaming serves as a window into the lives of young individuals.

Pilot Project Operations

The project was carried out between August 2023 and December 2023. The goal was to enable gaming hobbies, gaming events, and game teaching/courses for all residents and organizations in Espoo, regardless of whether the organization or resident owned suitable equipment or

customized gaming space. The project allowed residents and organizations to order 1–10 high-end gaming stations, complete with peripherals, for their desired space and event.

The pilot project implementation began in August 2023, starting with outreach to local stakeholders and decision-makers via email. RoundsGG provided information about the project and invited them to experience the gaming stations at the Assembly Summer 2023 event.



The pilot project aimed to open opportunities for experimenting with or teaching digital gaming hobbies with very low barriers to entry, by also offering professional guidance, instruction, or complementary activities related to esports alongside the gaming stations.

Following our initial outreach, we continued discussions with interested parties via email or phone and delivered the gaming stations to selected events. The gaming stations were utilized at six different events in Espoo and two in Helsinki. During the pilot project, RoundsGG hosted gaming and esports activities in the following events:

- 1) EsPa Iso Omena esports tournament
- 2) Elävä Espoonlahti event
- 3) School Action Day 2023 (3500 pupils)
- 4) Espoo Yhteislyseo – Game Night
- 5) Otajams 2024
- 6) Esports Pikkujoulut at Omnia
- 7) Assembly Winter 2024
- 8) Assembly Summer 2024

After each event, feedback was gathered from both participants and organizers via email. A technical assessment was also performed to evaluate the equipment's functionality.

Results

One of the most significant observations from the project was the considerable interest and demand, especially from the school sector, where gaming and competitive gaming are already familiar concepts. Additionally, game development requires powerful computers, and the service provided a cost-effective solution for space needs. The project demonstrated that the service was a good and interesting solution. It addressed issues not only in terms of cost-effectiveness but also particularly regarding space requirements.

There is a clear demand and interest for this concept, especially within the educational sector, both at the high school and university levels. In these settings, gaming and competitive gaming are already familiar concepts, and there has often been some form of activity in these areas. However, the high costs of equipment and the required investments for developing such activities have been significant constraints. This service clearly provides a welcome and interesting solution to these challenges.

The pilot project enabled the use of high-quality gaming equipment at events across Espoo and reached nearly a thousand players. It also allowed schools to organize gaming events, gaming-themed Christmas parties, and game development GameJams within educational institutions. Most of the events were freely accessible, making the pilot project visible and participatory for all

Espoo residents. This openness further increased the project's accessibility and impact.

The pilot project opened a new perspective for schools, particularly on how they can organize gaming and esports-related events and courses in the future, and utilize portable, high-performance gaming computers for other uses as well.

Shortly:

- Six events were organized (+ 2 attended in Helsinki) with approximately a thousand people utilizing the gaming stations.
- Gaming stations were delivered to multiple events, allowing participants to access high-quality gaming experiences without significant investments.
- Other Espoo departments are looking into utilizing this agile solution in The Finnish model for leisure activities.

MARKED

About

MARKED is an application that offers innovative ways to incorporate socio-emotional skill learning with participation in sports services. As users learn important life skills through the application's programs, they earn points that can be redeemed for various sports services such as swimming or gym access. The application's innovative points system can equalize opportunities for sports and exercise, promote awareness of available services, and reduce barriers to participation and experimentation.

Background information

According to the 2023 School Health Survey, the proportion of students who rate their health as average or poor has increased since 2015, especially among girls. In the spring of 2023, about one in four (25–29%) students in grades 8 and 9, as well as first and second-year students in high schools and vocational institutions, reported their health as average or poor. Girls (31–40%) reported poorer health more frequently than boys (16–20%). (Finnish Institute for Health and Welfare 2023)

The increase in anxiety among 8th and 9th-grade students and secondary education students, observed in the 2021 School Health Survey, unfortunately did not decrease in the survey conducted in spring 2023. Around one-third



Photograph: Marked

of girls in these grade levels and educational settings reported experiencing moderate to severe anxiety. This issue has become more prevalent among 8th and 9th-grade girls compared to previous surveys. In contrast, less than 10% of boys in the same age group reported anxiety between 2019 and 2023. (Finnish Institute for Health and Welfare 2023)

Pilot Project Operations

The MARKED pilot project lasted seven months and aimed to promote physical activity among students residing in the Espoo area and increase awareness of the sports services offered by the city. Additionally, the project encouraged users to develop their socio-emotional skills through the content provided by the MARKED app.

The partner organization for the project was Viherlaakso upper secondary school in Espoo. The app provided students with access to wellness programs and up-to-date information on the city's free sports services available each week. The sports opportunities included a gym, squash, climbing, fencing, and bowling.

At the start of the project, students completed an anonymous initial survey to gather information on their current situation and expectations for the pilot. This survey included questions covering various aspects such as awareness of current sports and exercise services, satisfaction with current activity levels, and changes in physical activity and engagement. Additionally, a joint workshop with students was held to clarify their needs and preferences for digital wellness solutions.

During the project, the impact of the digital service and gamification on increasing the use of sports services and overall well-being was monitored. One local high school, vocational institution, or youth association were selected to participate in the pilot project, which took

place between July and February. The user perspective on the effectiveness of the service was examined by collecting data before and after the project. The impact of the project was monitored through pre- and post-surveys. The project started with a joint workshop where students' wishes for digital wellness services and the equalization of sports opportunities, were discussed, and clarified.

Results

The results achieved during the project were significant, with a notable improvement in Espoo students' awareness of local sports services. Initially, none of the participants were aware of the city's free sports services, but by the end of the project, 100% of the participants were aware of these services, and the same 100% considered the city's offer to be important for students.

This result, even from a small sample, prompts us to consider the best ways to reach children and young people today. Are the cities' (sports) services being showcased in relevant places for them, ensuring that information about (sports and exercise) opportunities is effectively communicated? For instance, an application like this could be a viable option, and Espoo is currently operating a revamped browser-based service called "Hobby search".

However, there was no significant increase in student participation in sports services during the project, with reasons cited including school-related busyness, lack of motivation, and the timing of sports opportunities.

Among those who tried the service, 74.3% were satisfied with their current level of physical activity and hobbies, while 22.9% wanted to be more active. The final survey indicated a desire to continue using the application, leading to an extension of the licenses until May 2024. Additionally, 75% of respondents said they would recommend the app to their friends. A total of 52 students participated in the project.

Based on the application data, the most popular content areas were mental functioning and relationships. The average session time in the application was about 2 minutes, and around 22% of users engaged actively with the content. The final survey indicated that some participants had used the app's materials to initiate discussions with friends. However, no significant changes in socioemotional skills or mental health were observed because of the app's materials.

The role of the educational institution in the pilot project was crucial. The support and communication from the institution helped the project succeed, and student participation was key to achieving the project's goals. The results highlight the need for better communication about sports services and exploring ways to encourage students to participate more actively.

Shortly:

- Increased Awareness of Espoo's Sports Services.
- No significant increase in participation in the city's sports services.
- Around 22% of users engaged actively with the content.
- Most popular content areas were mental functioning and relationships.

Cave Entertainment

About

Cave Entertainment is a Finnish event organizer specialized in gaming services. Cave Entertainment provides a wide range of services and events related to gaming and its associated phenomena, including gaming sessions, consulting, driving simulator experiences, and virtual reality (VR) experiences.

Background information

Only 36% of 7–15-year-olds report meeting physical activity recommendations, which is a decrease from 38% in 2018 (LIITU study 2022).

According to Mueller et al. (2011), exercise games are a form of digital gaming that combines video games with physical activity, where the outcome of the gameplay is determined by the player's physical effort.

Using exercise games can increase daily physical activity drastically. Gamification also engages those who may not identify with traditional exercise. Research shows that motor skills can improve even during a short period of engaging in exercise games (Medeiros et al., 2017).



Photograph: Cave Entertainment

Cave Entertainment's VR gaming events engaged over 800 Espoo residents in total.

Pilot Project Operations

The Beat Saber on Tour project combined exercise and gaming in a new and enjoyable way for those who haven't previously experienced virtual reality. Cave Entertainment created a series of events where young people gathered and enjoyed the excitement of physical activity and gaming.

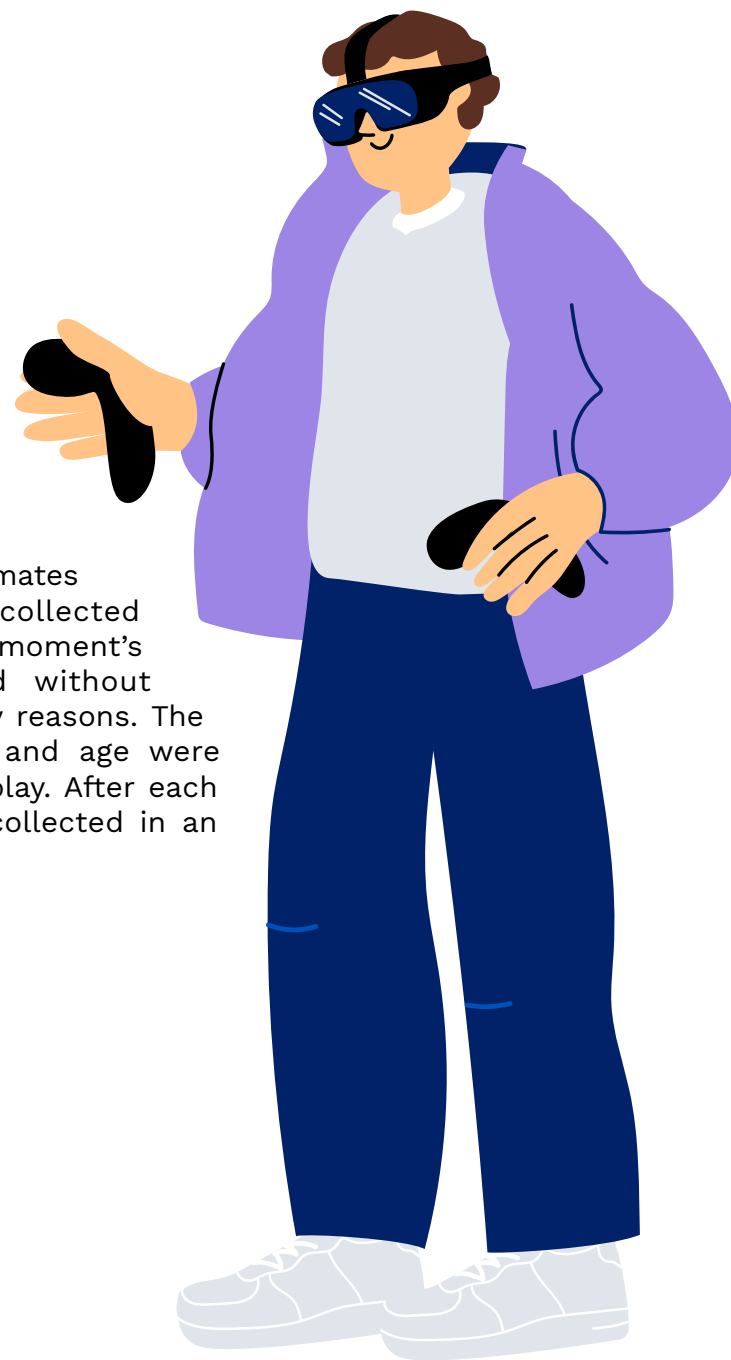
The Beat Saber on Tour project was implemented as a six-part event package as part of a larger series of events. The pilot project started as part of the Iso Omena tournament in Espoo, Finland. Cave Entertainment built a virtual reality playground in the shopping center, which attracted spectators from several floors and queues up to an hour long. This was done over two weekends, making a total of four event days.

Another event was hosted as a part of School Action Day 2023, the main event in Finland of the European Week of Sport. In School Action Day, our target groups were exclusively school aged children, to find out whether the primary school level is a possible solution to prevent exclusion.

As a final event, the pilot project culminated in the Lively Espoonlahti event. In short, "Lively Espoonlahti" is "a large-scale accessible event for the whole family in Espoonlahti Sports Park, Espoonlahti School and Espoonlahti Sports Hall. The event was free of charge. Cave Entertainment was responsible for the implementation of a virtual reality point in the Espoonlahti school sports hall. We rounded off

this event as a Beat Saber on Tour project. There was a queue for the whole event. A total of about 200 music tracks were spun through the virtual reality device.

Quantities of people, estimates and other data were collected physically on paper at a moment's notice and summarized without personal data for security reasons. The player numbers, gender and age were counted at the point of play. After each event, the number was collected in an excel spreadsheet.



Pilot Project Results

800 people attended the Beat Saber On Tour, with the main findings being the participation of the whole family, increased cohesion among children, and the emergence of different types of young people talking to each other.

65% of the players were aged 7–15, 25% were 15–20 years old and 10% were from other age groups.

The pilot project was in three different locations to get to benchmark different age groups. The games were most popular with young people. Although it was a virtual game for solo play, the implementation was also aimed at the public. The pilot project had a large external screen and a professional plot/sound system. In the events, there seemed to be a sense of belonging; people who had never met before became closer through the games and started discussing game-related topics.

During the School Action Day 2023 event, teachers came separately to ask if these kinds of activities could be implemented on a smaller scale in schools. There seems to be an interest for this kind of concept at the primary school level in Espoo. Exercise gaming was seen as a potential tool in increasing activity in schools.

Shortly:

- Approximately 800 people played exercise games in six different events.
- Most players (65%) were 7–15 years old.
- Exercise gaming has sparked interest among pupils and schools.

Rehaboo!

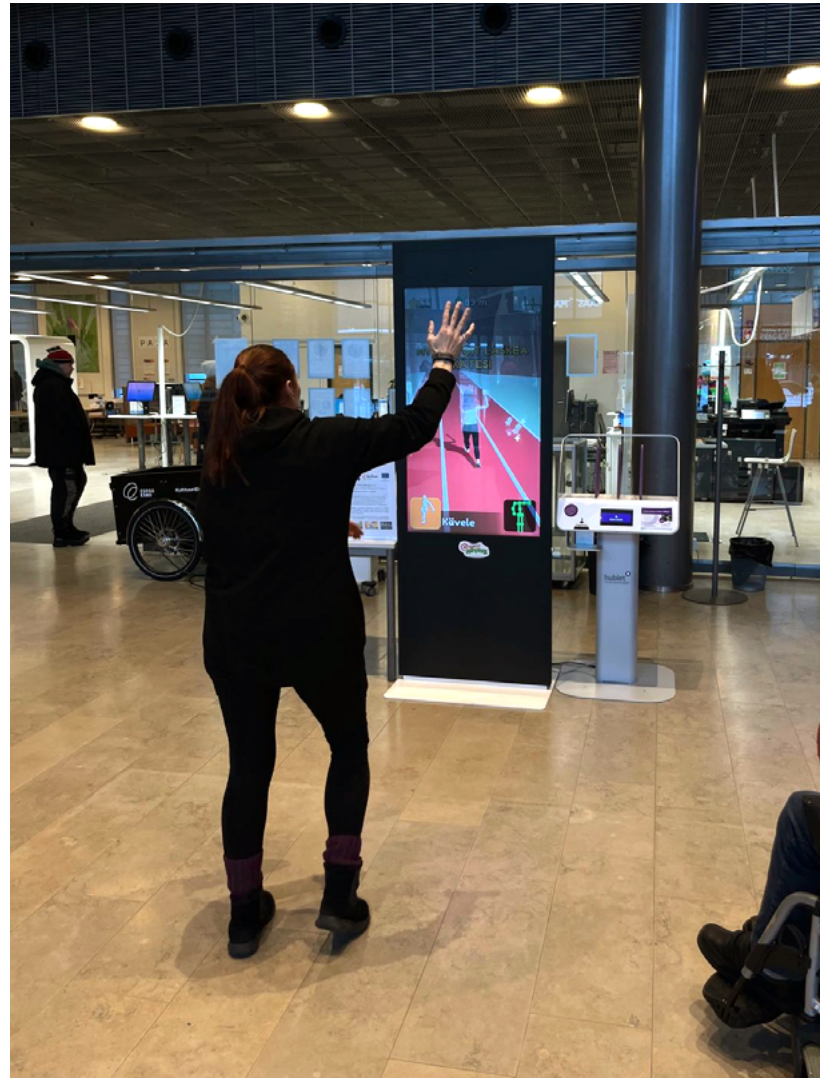
About

Rehaboo! ActiveMotion is a new and innovative activation and rehabilitation game where the player's body serves as the game controller. It utilizes cloud-based artificial intelligence for motion detection and analysis. The game can be played on a gaming platform, laptop, tablet, or smartphone, and the device's camera tracks the player's body movements, which are used to control the game character, avatar, within the game world. The game is based on physiotherapeutic movements that activate large muscle groups in the main track, and in MiniGames, targeted exercises are performed that affect both physical and cognitive skills.

Background information

According to Tuohimaa (2016), research indicates that seniors are interested in digital games, but there are very few games specifically designed for this age group available on the market. While games for senior rehabilitation have been developed for various platforms, they have not progressed to widespread distribution. The physical and cognitive abilities among seniors vary greatly, meaning that the suitability of different games is highly individual.

Playing digital games has been proven to positively impact memory and physical activity. Encouraging more seniors



Photograph: Oona Koivula

Rehaboo!'s activation and rehabilitation game was available for trial at the Sello Library in Espoo.

to take up digital gaming could be advantageous, but the challenge lies in overcoming barriers related to unfamiliarity with appropriate games and equipment. Additionally, there may be concerns or negative perceptions about gaming, such as fears of addiction. (Tuohimaa 2016)

Research shows that motor skills can improve even during a short period of engaging in exercise games (Medeiros et al., 2017). Studies have found that various game interventions have improved seniors' cognitive abilities and physical function (e.g., Anguera 2013 & Whitlock 2012).

Pilot Project Operations

The aim of the pilot project was to encourage visitors to the library, especially two very different target groups, young people, and the elderly, to engage in physical activity through an activation game. The second goal was to encourage people to register for the game, thereby obtaining their own player name on the leaderboards. This way, activity would not be limited to just the library environment, but physical gaming would be possible anywhere using their own device.

The project kick-off event was the School Action Day 2023 in Espoo at the end of September, where hundreds of pupils tried out various forms of physical activity, including ActiveMotion.

As part of the project, the Rehaboo! ActiveMotion game theme was introduced to the Sello Library. Additionally,

a Hublet docking station was set up at the library, featuring three loanable tablets, each preloaded with the ActiveMotion game. The project ran from November 2023 to January 2024.

The numbers of new game results were continuously monitored, and the monthly results were recorded. The gameplay was also evaluated on-site at the Sello library.

Results

During the project, efforts were made to encourage visitors to play the game and register their results. Over 600 games were played during the two-month gameplay period. Hublet-tablets were loaned over 200 times. However, there were only 18 new registered users (enabling gameplay on personal devices), which is fewer than hoped for. These results show that exercise gaming was much more frequent through a totem in a public place, rather than registering and playing alone at home.

It can be speculated whether exercise gaming is perceived as a casual, impulsive, and unstructured activity. Exercise games are played when they are easily accessible, and the opportunity for gaming arises in everyday life. Initially, people may not actively seek out games, but for many, the starting point for gaming and physical activity is an impulse, light-hearted fun, with exercise as a byproduct. Organized activities, registration, and performance measurement may perhaps be initially frowned upon in this context. Exercise gaming is thus an excellent way to

activate inherently passive spaces, such as lobby areas in schools, sports facilities, and libraries.

It was noticed that especially children seemed naturally interested in the game theme, while adults and the elderly were more hesitant to play a game where the movement of their own body serves as the central game controller. The game clearly interested the School Action Day 2023 attendees, and it was noticed that playing in front of the large screen was particularly enjoyable for the school children.

The game offered two modes: slow and fast. On average, 60% of players chose the fast mode, while 40% opted for the slow mode. Assuming that children and youth generally played the fast mode, and the elderly played the slow mode, it can be concluded that the elderly were also reached well by the game. However, it's only speculation to generalize players of different game modes like this.

Game numbers showed a clear increase towards the end of the pilot. However, the integration of pre-planned events such as mall walks and school visits with the active game in the library, and subsequently initiating home gameplay, remained minimal during the pilot.

Shortly:

- Over 600 games played during the project.
- Exercise gaming was much more frequent through a totem in a public place, rather than registering and playing alone at home.

The Finnish Esports Federation

About

The Finnish Esports Federation (SEUL) works as the umbrella organization for Finnish competitive electronic gaming. Their mission is to improve and promote electronic sports and the activities of our members. The federation was established in December 2010 to respond to the growing need for an organization to promote esports as a hobby and as a respectable sport. (SEUL 2023)

The activities performed by SEUL are divided into the development of esports, protection of player's interests and communicational work. The development of esports is done partly by utilizing workgroups, which are based on the work of our volunteers. The board is responsible for the day-to-day operations in cooperation with employees. (SEUL 2023)

Photograph: Jussi Jääskeläinen, SEUL ry



Insomnia 2019

Background information

'New normal' in Finnish gaming indicates the consolidation of gaming as a central part of post-pandemic life and leisure activities. Considering all forms of gaming, including occasional gaming, 98% of Finns play some form of game at least occasionally, with the proportion of 'actively' gaming individuals, defined as those who play at least once a month, comprising 89% of the surveyed population aged 10 to 75 in mainland Finland ([Table 2](#)). (The Finnish Player Barometer 2022)

The trend associated with the shift in gaming culture is evident in the growing popularity of esports and game streaming. The popularity of real-time online gaming and watching various game recordings is on a clear rise. Physical purchases of games are decreasing, and it is increasingly common for games to be digitally downloaded from various online platforms. (The Finnish Player Barometer 2022)

According to Ruotsalainen and Meriläinen (2023), harmful behavior is a well-known issue in digital gaming cultures. Previous studies have indicated that digital gaming environments often exhibit discrimination and hostility towards marginalized groups, including women, LGBTQIA+ individuals, and players of color (e.g., Uttarapong, Cai & Wohn 2021).

Pilot Project Operations

The pilot project aimed to train individuals to act as moderators on digital platforms, thereby supporting inclusivity in the field of esports. The training was piloted in Espoo. Participation in the training did not require any prior knowledge or skills, providing a new opportunity for involvement in the esports field.

Work on the pilot project for moderator training began in the fall of 2023 and is scheduled to conclude in late spring 2024. In a survey conducted by SEUL on equality and gender issues, the need for moderator training was highlighted as a concrete suggestion. This led to the development of the training program as a pilot project.

A moderator is a person responsible for overseeing discussions conducted online. In the context of esports, this could involve monitoring chat discussions during gaming broadcasts or managing conversations on various community platforms. The project's goal is to train individuals to serve as moderators on these platforms and, in turn, support non-discrimination within the esports field.

The Finnish Esports Federation conducted a moderator training as part of the project in spring 2024. Training materials were developed, and pilot training was organized. The training was piloted in Espoo in the spring of 2024, featuring one in-person session.

Results

The outcome of the pilot project was moderator training. Moderators oversee discussions conducted on the internet, which in the context of electronic sports can involve chat conversations during game broadcasts or discussions taking place on various community platforms.

A total of five individuals attended the initial training session. Although three participants registered for the additional training, the session was canceled due to the low number of attendees. The project identified a clear need for such training; however, the format of the training (in-person vs. remote) is still under consideration. The Finnish Esports Federation received substantial feedback from members and the esports community indicating that a training like moderator training is better suited for online delivery.

Shortly:

- 5 people went through moderator training to become advocates for a safer and more inclusive gaming culture.
- Feedback indicated that moderator training is better suited for online delivery.

Espoo in 2024

3 schools use exercise gaming to activate daily life in schools.

4–6 esports and gaming events held every year.

5 esports organizations offering esports and gaming activities.

5 schools actively participating in esports.

11 pilot projects on digitalizing physical activities and sports have been conducted.

2000 hours of additional physical activity utilizing exercise games during the project.

25 000 people have participated in esports and gaming culture events from 2022–2024.



The opportunities in esports, gaming culture, and digitalizing exercise and sports have been identified, and responsibilities have been allocated. Esports organizations have become permanent partners with the City of Espoo's Sports and Exercise Unit. Through pilot projects during the initiative, effective collaboration and support models have been established to integrate these organizations into the local sports ecosystem. Espoo provides esports organizations with support in expertise, facilities, and grants through its Sports and Exercise Unit.

Digitalizing sports and exercise have been identified as a strategic focus area within the Sports and Exercise Unit. This focus area is overseen by the City of Espoo's permanent esports and gaming culture expert. A strategic approach ensures that Espoo will continue to harness both existing and emerging digital trends in sports and exercise in the future.

Digitalizing sports and exercise have expanded significantly beyond the initially focused and largely esports-oriented approach of the project. During the project, additional areas within digitalizing sports and exercise have been identified: e.g., the digitalization of sports facility construction, the digitalization of traditional sports activities, the digitalization of adaptive sports, and the activation of learning environments through gamification techniques.



As a result of the project, Espoo has initiated the development of digitalizing swimming education, directly building on the intervention carried out during the project in collaboration with Hydrohex. The digitalizing school swimming lessons will reach over 7,000 children and young people annually.

The exercise gaming piloted in school environments during the project will be further developed with co-funding (totaling €155,000) received from the Ministry of Education and Culture. The exercise gaming interventions will be expanded to cover early childhood education, primary schools, and secondary education environments.

The project's impact extends to both national and international events. During the project, Espoo has gained recognition as a city focused on digitalizing sports and exercise, attracting national and international events. For example, the Elisa Masters esports event was held in Espoo in 2022 and 2023 and is scheduled to take place again in 2024. In 2023, Elisa Masters brought 8,000 esports fans to Espoo and reached over 30 million viewers through broadcasts. Event attendees are engaged in physical activity each year through methods like exercise gaming.

The benchmarking visits and networking activities during the project have been crucial sources of knowledge and have opened doors to Europe-wide networks. The project has maintained a network for European cities involved in esports. This network has been an essential hub for sharing expertise, where cities with different socio-

demographic structures have engaged in peer learning and co-developed their esports initiatives. Despite varying starting points, the challenges and questions related to esports have been remarkably similar.



Espoo liikkuu is a collective for the entire sports community in Espoo. Espoo offers thousands of opportunities for sports and exercise.

Strategic Guidelines for Promoting Digitalizing Sports and Exercise in Cities

As societies evolve, the integration of digital solutions into everyday life becomes increasingly important. Digitalized sports and exercise offer innovative ways to engage citizens, promote physical activity, and build vibrant communities.

This chapter provides practical guidelines for city officials and experts on how to effectively promote and implement digital exercise and esports activities. The guidelines are based on interviews, surveys, workshops, benchmarking, and particularly the pilot projects carried out during the project. From these activities, we have gained valuable insights into how the city can lay the foundation for modern sports and exercise that engages future generations as well.

By leveraging these modern approaches, cities can enhance public health, foster social connections, and drive economic growth.

Key areas covered include:

- Understanding the benefits of digital sports and exercise
- Developing infrastructure and support systems
- Partnering with local organizations and businesses
- Creating inclusive and accessible programs

A pilot-driven approach, experiments, and collaboration that transcend sectors and administrative boundaries have provided us with a comprehensive understanding of what is required from cities to keep up with the digitalization trend in the fields of exercise and sports.

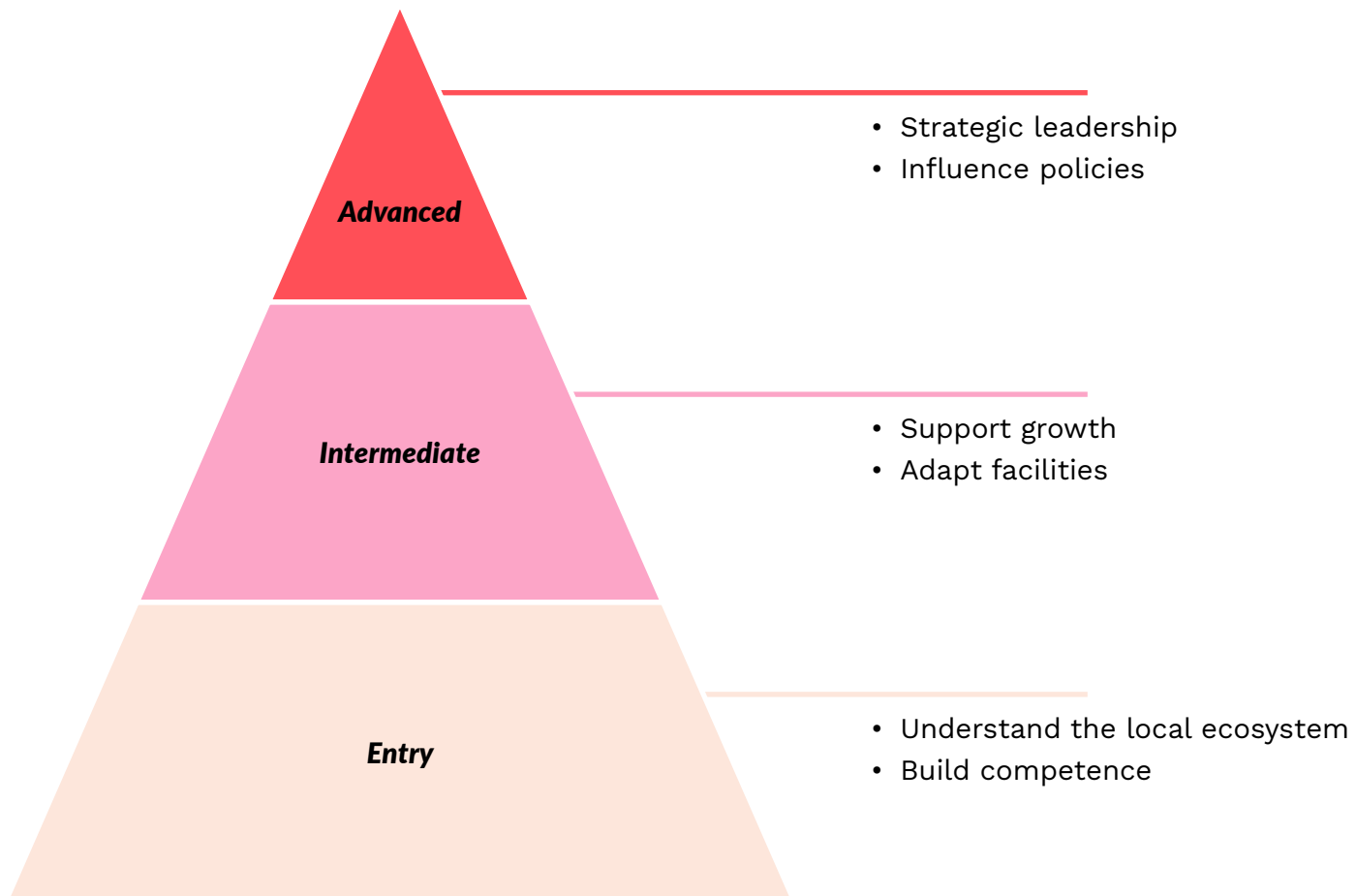
Based on the two-year project, we have identified three key areas that we recommend cities focus on if they are interested in promoting digital sports and exercise:

- 1) Competence
- 2) Facility solutions
- 3) Grant Practices and Other Support Mechanisms.

These three focus areas can be divided into three levels of expertise based on the project's findings, which are entry, intermediate, and advanced level of participation.

In the next part, we will go through the three levels in detail, and give examples on the actions that can be taken.

Three levels of participation



Entry-level: Building Competence

In the rapidly evolving landscape of digital sports and exercise, building competence is a fundamental step for cities aiming to promote and sustain these activities. Competence involves the knowledge and expertise to understand and navigate the broader ecosystem of digitalizing sports, exercise, and esports.

Understanding local ecosystems

Understanding the phenomenon is the initial step. To promote the digitalization of exercise and esports, the city organization must first establish an understanding of the local landscape and ecosystem in these fields.

The city organization needs to identify who operates in the field of esports and/or digitalizing exercise, both locally and nationally. To advance the digitalization of sports, exercise, and esports, it is crucial for city organizations to first comprehensively map the local and national ecosystems in these fields. This involves gaining a deep understanding of the key stakeholders, organizations, and initiatives operating within the city's boundaries as well as within the broader national context. By identifying these actors, city organizations can effectively gauge the current landscape of digital exercise, sports, and esports.

A city organization does not need to have internal expertise in digital matters and related phenomena from the outset. This is precisely why familiarizing oneself with the local ecosystem and engaging in co-development are crucial. Competence will inevitably be found somewhere

within the local ecosystem; it could be among clubs, local activists, sports federations, businesses, or individuals.

Additionally, it is important to grasp the national frameworks and legislation that govern these activities. Understanding the regulatory environment provides insights into the legal considerations, policies, and guidelines that impact the implementation and promotion of digital exercise and esports initiatives.

A central theme throughout our project has been that community is everything. Even if a city has the most impressive gaming facilities and support systems, they are worthless if they don't serve the local community and its needs. Identifying, engaging with, or even creating a local digital community or esports culture is crucial. This can involve a wide range of activities: for example, who are the local esports enthusiasts or Pokémon Go players, and how do they perceive the city's reception of their activities?

Keep these in mind:

- Identify key stakeholders and organizations
- Engage in co-development
- Understand the regulatory landscape
- Build a community-centric approach

Understanding Technical Requirements for Digital Exercise, Sports, and Esports

Competence also encompasses a range of technical issues, such as age restrictions, data security, and internet requirements. City organizations must carefully review these issues and consider them when making choices, acquisitions, and decisions related to digital sports, exercise, gaming culture, and esports.

An example of technical considerations a city should be aware of and potentially address is related to esports. In most competitive games, players participate online without traveling to specific locations. This means a stable and high-quality internet connection is essential, much like a football pitch or an ice hockey rink.

In exercise games one needs to understand for example how the equipment learns information from the real world. If it is by a camera, what information is stored and where? This is extremely important when you place exercise gaming equipment and other digitalizing sports equipment near children or in public spaces.

Keep these in mind:

- Age restrictions
- Data security and privacy
- Internet requirements
- Equipment requirements



Intermediate level: Support Mechanisms

Once the city has reached a certain level of competence, it can respond to emerging needs and requests from the field with expertise. Based on the observations and data gathered in this project, we have identified three general forms of support: facilities, financial assistance, and collaborative development activities.

Adapting Existing Structures to Incorporate Esports and Digitalizing Sports and Exercise

In Finland, cities generally have strong support mechanisms for traditional sports organizations, which promote citizen activity through sports clubs, among other channels. Adapting existing structures to incorporate esports and digitalizing sports and exercise considerations is crucial to lay ground for future activities.



Why should digitalization and the needs of digital communities be considered in a new way?

- Digitalization is rapidly transforming how people connect, communicate, and participate in various activities, including sports and recreation.
- As more aspects of life shift online, traditional approaches may no longer be sufficient to engage and support these communities.
- Recognizing and addressing the specific needs of digital communities can help foster inclusion, innovation, and equitable access to resources.
- Adapting to digitalization allows cities to stay relevant and responsive to the evolving expectations of their residents, particularly younger generations.

In this section, we will explore support mechanisms from the perspectives of facilities, types of funding, and collaborative development. However, there are many other potential ways to support local actors, which vary depending on the city's characteristics.

Keep these in mind:

- Integrate digitalization into current support systems
- Promote Inclusivity

Facility Solutions

Esports Facilities

According to Gaming Barometer (2022) approximately 80.3% of Finns engaged in digital gaming at least occasionally, compared to 78.7% in the previous 2020 study. Actively, 65.1% of Finns participated in digital gaming, up from 63.6% in 2020. On average, Finns spent more than 6.8 hours per week playing digital games in 2022, a slight decrease from the reported 7 hours per week in 2020. The median time spent on gaming remained consistent at 4 hours per week. These figures illustrate just how popular gaming has become. It's now more uncommon not to play any games than it is to be a gamer.

In Finland and Espoo, both before, during, and after the project, there has been a clear need for dedicated gaming and esports spaces. The project has identified three facility options:

- 1) the city creates these spaces on its own,
- 2) the city co-creates these spaces through partnerships or
- 3) the spaces are private, in which case the city has no say in their operations.

When using the city's own gaming spaces, certain challenges have been identified. Based on the benchmarking visits

and interviews conducted during the project, it was observed that many gaming areas fall under youth services and are in local youth centers. These spaces are generally intended for casual gaming rather than esports. This can create a problem where the goals and competence differ significantly between city departments.

Based on the project's operations, a solution to these types of issues can be found in clearer internal role allocation and division of responsibilities. Such problems often stem from unclear areas of responsibility, where it is uncertain which entity oversees coordinating and developing a specific area or phenomenon.

If the city decides to build its own facilities, it is crucial to have a realistic and up-to-date understanding of the local esports scene and ensure that the new facilities meet the requirements and criteria of local stakeholders. There is a risk that city-built facilities may be designed based on the city's own needs and perceptions, which could result in the actual users not utilizing them effectively.

Based on the work done in the project, we have identified what may be the most effective way to support local esports organizations in relation to facilities:

The city subsidizes the facilities that local organizations need.

In Espoo, Heimo Esports owns the gaming and esports space. Due to the successful pilot activities, the City of Espoo's Sports and Exercise Unit has initiated collaboration with Heimo Esports regarding the use and development of the facility. The city of Espoo supports the facility by purchasing a certain number of hours each week, which local schools and hobby groups can use.

This type of arrangement can be very beneficial in areas where youth work or other related activities are not fully funded by the city. Through this kind of arrangement cities can both subsidize local facilities and offer affordable gaming activities for local schools, clubs, and associations. In this arrangement the city does not need any facilities of its own, and generally the risks are very low.

Through benchmarking visits and leveraging the networks built during the project, we observed the significant impact of the placement of esports facilities on the overall profile of esports. For instance, our visit to Copenhagen provided a compelling example of successful esports facility design and placement. The esports facilities were situated within multifunctional sports halls and cultural centers. These spaces were spacious, well-lit, and comfortable. On one side of a glass wall, activities such as squash or futsal were taking place, while on the other side, esports teams gathered, engaging in various forms of physical activity within the multifunctional sports hall.

In the project's view, this is a crucial aspect of building the profile of esports. The perception of dark basements as



esports spaces is shifting towards a more multidimensional approach that emphasizes healthy lifestyles. Copenhagen's philosophy towards esports can be summed up as follows: "Esports is a hobby and a sport just like any other."

Keep these in mind:

- A user-centered Approach in facility design
- Establish clear roles and responsibilities among city departments
- Esports facilities can be more than just performance venues: spaces integrated with sports and exercise opportunities emphasize healthy lifestyles

The digitalization of sports and exercise in general facility planning

To begin with, it should be noted that the scope of digitalizing sports and exercise is very broad, and the facilities where these loosely related activities can occur are highly varied. For these reasons, this section will not attempt to cover all possible scenarios but will instead present some activity and facility scenarios that we have encountered during the project.

When we talk about digitalizing sports and exercise, we are referring to the phenomenon where global trends in digitalization have inevitably extended to the realm of sports.

When designing spaces for leisure, culture, and youth services, digitalizing sports and exercise can be considered in several ways. For instance, by mapping out locations for an esports room, planning network and electrical infrastructure to accommodate esports events, and designing open spaces to fit selected exercise gaming solutions.

During the project, we identified issues related to facilities in the context of exercise gaming. We tested the benefits of exercise gaming in school environments, and the positive effects were undeniably demonstrated (2,000 additional hours of daily physical activity during the project). However, challenges such as acoustic issues were evident in the basic school environment. It can often be difficult to find suitable indoor spaces within school facilities that accommodate exercise gaming, providing enough space for movement while ensuring that the noise generated from the enjoyment of sports and exercise does not disturb the surrounding area.

The digitalization of sports and exercise and esports can be incorporated in several ways:

- **Public Spaces:** Ensuring that these areas are equipped with the necessary internet connections and electrical capabilities to support exercise gaming equipment, such as the CSE iWall (used in our pilot project), which requires Wi-Fi and 9 square meters of space.
- **(School) Gyms:** During the construction phase, electrical and internet connections can be planned to accommodate esports events like tournaments and LAN parties. This approach makes the gyms more versatile, allowing them to support other activities that require strong internet connections as well.
- **IT rooms or PC labs:** Some schools build and maintain dedicated rooms for activities like 3D printing, game development, and more. By collaborating with the school and local esports clubs, these rooms can be designed in a way that allows for esports activities using the same equipment. This approach enhances the versatility of these resources and helps to achieve a higher usage rate.

The digitalization of sports and exercise, such as exercise gaming, often enables participation for individuals with mobility limitations. Gamified solutions also make it easier to accommodate differences in participants' cognitive abilities.

To fully capitalize on the opportunities presented by the digitalization of sports and exercise, we must understand that while the role of digitalization is significant, the physical reality and conditions serve as the foundation for digital activities. Therefore, we must ensure that enthusiasts, organizations, and emerging trends have the space to grow and develop in the physical world, and that the city is being built with them in mind.

For example, during Hydrohex's pilot project, potential issues were identified in integrating digital solutions into existing traditional sports and exercise facilities. In swimming pools, this was concretized by the challenge of placing screens in pool areas, which require internet connectivity, power sources, and moisture-resistant displays — requirements that have not been as relevant in previous decades as they are today. This example is just one of the challenges encountered.

Keep these in mind:

- **Versatile space design:** design spaces with flexibility in mind, allowing for the integration of both traditional and digital sports activities
- **Adaptability for accessibility:** design spaces that are inclusive of various physical and cognitive abilities

Grant Practices

Based on this project, our recommendation is that cities should evaluate current frameworks, policies, and operational procedures to ensure they accommodate the evolving needs related to esports and digital exercise. It may entail modifying existing protocols, guidelines, or resource allocations to better integrate these activities into ongoing practices. This adaptive process often involves stakeholder consultation and may require adjustments to organizational structures or workflows.

Changing grant practices is essential if a city or municipality intends to participate in the digitalization of sports and exercise in its region. This necessity arises primarily from three key reasons:

- 1) Digitalization has significantly impacted the organization of sports and physical activities. For instance, in Finland, most esports organizations are limited companies rather than associations. Existing grant practices often prevent collaboration with these types of entities in many situations.
- 2) Digitalizing sports and exercise are predominantly developed by limited companies and product owners. If city grants for sports facility construction, venue subsidies, or events exclude the participation of limited companies, it creates a situation where nothing can be accomplished.
- 3) New phenomena such as esports and exercise gaming could theoretically fit within the city's grant frameworks. However, due to preconceived notions or a lack of expertise, the authorities responsible for grant decisions may not allocate funding to these activities and their organizers.

Every city and municipality in Europe and around the world will experience the impact of digitalization on sports and recreational activities, regardless of their opinion on the phenomenon. Only by being proactive, forward-thinking, and willing to collaborate can a city strategically benefit from these trends.



For example, the project has encountered situations both in Europe and Finland where cities have denied grants, support, and collaboration to esports organizations, even when these organizations have been associations or NGOs. In these cases, the reasoning behind the decisions has varied, ranging from a lack of understanding of the phenomenon to holding inaccurate opinions about it. One example of a false opinion is the belief that an esports club promotes a sedentary lifestyle, even though the club in question includes mental and physical well-being as part of its team activities.

By changing grant rules and shifting the attitude towards esports and digitalization in general, cities can gently encourage esports clubs to adopt a more holistic approach to training. This approach would encompass not only mechanical skills and in-game training but also mental and physical well-being. By legitimizing esports and granting it more official recognition, we can improve the situation for clubs, individuals who pursue it as a hobby, and current professional players.

Based on the project's benchmarking, interviews, surveys, and pilot projects, we have identified several common forms of support, including the following:

- Support for establishing club activities
- Subsidies for club facility construction
- Training for coaches and instructors

All of these are currently used in Espoo in some capacity. When deciding the grants that fit the organization, one needs to keep in mind the realities they have locally and nationally. Depending on the country, there can be already existing grant structures that can be used in esports in certain situations. Based on the project's findings we recommend that only if you have no already existing grant structures you can modify, should you create fully new ones just for esports or other digitalizing sports phenomenon.

We recommend leveraging national and international funding opportunities, such as Erasmus+ Sport and Erasmus+ Youth, which are particularly well-suited for pan-European projects related to esports and exercise gaming. The city can apply for these grants directly or support local organizations in their applications, providing significant benefits to enhance regional activities and offerings for both parties.

Keep these in mind:

- Modify existing procedures and grant practices if possible
- Leverage national and international funding opportunities
- Be open to private-public collaborations

Co-developing

Co-developing initiatives with local stakeholders in esports and digitalizing sports and exercise, particularly addressing clubs' needs and support mechanisms, requires a collaborative approach that respects and leverages community expertise.

Community is everything!

When exploring and benchmarking European locations, it has been observed that one role of the city in esports ecosystems is consistently recurring. In almost every case, the city has acted as the facilitator of discussions. The city itself may not necessarily be at the forefront of development, but it brings together local stakeholders and seeks out synergies within the region. This role provides the city with an excellent opportunity to influence the development of the local ecosystem. It also involves highlighting esports activities happening within the city organization, such as potential school programs and youth employment initiatives.

Based on our experience with this project, we believe it is effective for the city to be involved from the very start of the idea and experimentation phases. It is crucial for the city to stay informed about developments in the field. Companies and esports/digital sports operators continually shape the landscape and the environment in which the city operates. Therefore, the city's primary goal



should be to maintain an up-to-date understanding of these activities.

Transitioning from reactive to proactive operations is crucial for enhancing efficiency, reducing risks, and driving long-term success. In this shift, it is important to focus on anticipating challenges and opportunities rather than just responding to issues as they arise. This requires a deep understanding of phenomena and trends, enabling predictive analysis and strategic planning. Implementing robust systems, such as grants and other support mechanisms, for continuous monitoring and feedback is also essential to identify potential problems early. Additionally, fostering a culture of innovation and agility within the organization allows teams to adapt quickly and effectively to evolving circumstances, ensuring that proactive measures are both timely and effective.

The city must have the necessary expertise and existing structures to support digital communities to enable such reactive measures.

Keep these in mind:

- 1) Identify key local esports and digital sports actors and understand their needs, challenges, and aspirations.
- 2) Create formal structures to facilitate ongoing dialogue and collaboration.
- 3) Commit to co-development activities. Allocate resources for it and be realistic. This is the most crucial factor in how internal and external actors perceive the city and its central trustworthiness.



Advanced level: City as a Proactive Actor

Proactive development in the realm of digitalized sports and exercise might involve predicting the rise of new technologies, allowing the city to respond to potential changes in space requirements or the emergence of entirely new activities. By anticipating these developments, the city can ensure that it is prepared to provide the necessary infrastructure and spaces as new disciplines evolve.

Proactive action means strategy

Cities must first establish competence, support structures, and connections with local actors based on previously discussed themes. Once this foundation is in place, the city can develop its own strategy for both the present and the future, considering its unique characteristics, resources, and other factors.

For example, the City of Espoo's journey into esports and the digitalization of exercise and sports began in 2019. The first few years were spent identifying and developing internal stakeholders and processes, as well as building competence in the field of esports.

Following this, Espoo developed an esports strategy, hired a dedicated employee, defined internal roles and responsibilities, and allocated resources for the strategy's implementation. This strategic approach has led to initiatives such as securing funding for this project, hosting international esports arena events, and bringing new phenomena into the city's focus, such as exergaming and the digitalization of traditional sports.



Over the past five years, Espoo has successfully attracted internationally and nationally significant events, facilitated the establishment of new clubs, advanced esports education within schools, and most recently, contributed to the digitalization of swimming education for students. This entire initiative began with the aforementioned focus on understanding emerging phenomena, enhancing competence, networking, and allocating resources to achieve the strategic objectives.

Espoo has also been actively engaged in discussions and participated in national authorities' activities concerning the digitalization of exercise, sports, and esports. For instance, the city's esports expert was a member of the Ministry of Education and Culture's working group on the reform of the Act on Audiovisual Programmes. This working group is a prime example of highly proactive action, as it offers the opportunity to influence the operational conditions of the entire national sector, such as setting age ratings for games, which are regulated under the Ministry of Education and Culture in Finland.

Moreover, cities can take a proactive role by fostering partnerships with technology companies, universities, and research institutions to drive innovation in the digital exercise and sports sector. By collaborating with these entities, cities can pilot new technologies, such as augmented reality sports platforms or AI-driven personalized exercise programs, within their communities. These partnerships can also facilitate the development of urban spaces that are optimized for digital sports,

blending physical and virtual environments in ways that encourage active participation. By positioning themselves as hubs for innovation and experimentation, cities not only enhance their appeal as dynamic and forward-thinking communities but also ensure they are at the forefront of shaping the future of urban sports and exercise.

Keep these in mind:

- Clear division of responsibilities and roles is essential for effective development in the field of digital sports and exercise
- Develop your own strategy based on the specific context of your operating environment

The key to scalable success lies with national leadership

Based on the benchmarking visits, interviews, and pilot projects conducted in the project, a uniformity of existing opportunities and challenges across Europe was identified. An individual city or organization can advance the digitalization of sports and exercise to a certain extent independently, but scalable and effective change requires cohesive strategies.

To develop a comprehensive national framework for digitalizing sports, countries must establish a structured and strategic approach that harnesses both public and private sector strengths. In Finland for example, bodies such as the Ministry of Education and Culture (OKM) and the National Olympic Committee could lead this initiative, ensuring that digital sports, including esports, are recognized as essential components of the national sports agenda.

These institutions could be responsible for crafting policies that foster the growth of digital sports, including esports regulation, the development of training programs, and the integration of digital platforms into traditional sports. Finland's engagement with the EU's digitalization efforts serves as a model for aligning national frameworks with broader European objectives.

Furthermore, the national framework could prioritize collaboration across various sectors, including education, technology, and sports. Educational institutions are pivotal in this ecosystem, as they can create curricula focused on digital literacy in sports, encompassing coaching

and management in the digital age. Embedding digital sports into educational programs ensures that future professionals are well-prepared to lead in this fast-evolving field. Collaborations with tech companies and research institutions can also be crucial, enabling the development of innovative solutions that can be implemented within the national sports infrastructure.

Finally, a successful national framework could also address the organization and regulation of the esports sector. This includes encouraging the formalization of esports organizations to ensure they operate sustainably and contribute to the broader sports ecosystem. By establishing standards for competition, player welfare, and training, national bodies can help professionalize esports, ensuring it becomes a respected and integral part of Finland's sports culture. Such a structured approach could help Finland maintain its leadership in digital innovation while fostering a healthy, competitive environment for digitalizing sports at all levels.

Relevance to Traditional Sports

The relevance of this project to traditional sports is undeniable. The rapid digitalization of the sports industry is not confined to emerging phenomena like exercise gaming and esports. Traditional sports are increasingly adopting digital technologies across various areas such as training, fan engagement, data analytics, and even governance. For example, technologies like virtual reality, AI-driven performance analytics, and online streaming

platforms are becoming integral to traditional sports. As these technologies become more ingrained, the challenges currently faced by digitalizing sports—such as the need for regulatory frameworks, digital literacy, and infrastructure—will similarly impact traditional sports.

As traditional sports continue to embrace digital elements, the lines between “small” digital phenomena and “big” traditional sports will blur. Issues like data privacy, fair play, and the commercialization of digital assets will become central to both fields. Therefore, the frameworks and solutions being developed now for digitalizing sports will serve as a blueprint for addressing similar challenges in the broader sports industry.

Addressing Regulatory Challenges

A lack of understanding or coherent policy can lead to unintended and potentially harmful consequences. In Finland, for instance, esports organizations face challenges when coaching junior players due to the legal framework governing game age ratings. The Act on Audiovisual Programmes, which aligns with the European PEGI system, includes provisions that allow for a three-year reduction in age limits if an adult (18+) is present. However, the National Audiovisual Institute (KAVI) interprets this law in a way that prevents Finnish organizations from effectively utilizing this flexibility. As a result, some organizations cannot conduct in-person coaching sessions, pushing young players to seek online coaching from European providers who are not bound by Finnish regulations. This

situation inadvertently benefits foreign entities while placing domestic operators at a disadvantage, highlighting the need for clearer policies that better support local esports development.

The Unique Nature of Esports Federations

Esports federations differ significantly from traditional sports federations due to the unique nature of esports. Unlike traditional sports, where governing bodies have autonomy over rules and regulations, in esports, game publishers hold the ultimate authority as they are the creators and intellectual property owners of the games. This dynamic means that esports federations must navigate a landscape where publishers have the final say in how their games are played, distributed, and monetized. As a result, the role of esports federations is more about facilitating dialogue and collaboration between various stakeholders, including publishers, players, and governments, rather than exerting direct control over the sport itself. This key difference requires a different approach to governance and policymaking in the esports sector, emphasizing the need for partnerships and negotiations rather than traditional top-down regulatory models.

Responsibilities Between Public and Private Entities in Digitalizing Sports and Exercise

The digital transformation of sports and exercise is a rapidly evolving landscape that presents both opportunities and challenges for cities, municipalities, and private entities. As this transformation accelerates, the roles and responsibilities of public and private stakeholders must be clearly defined to maximize the benefits for local communities and the broader economy.

The Role of Public Entities: Nurturing Grassroots Engagement

Based on this project's findings, cities and municipalities have a unique and vital role in fostering grassroots activities, which serve as the foundation for a vibrant and inclusive digital sports and exercise culture. Public entities are well-positioned to focus on the development and support of hobbies, small organizations, and local or regional events that directly benefit the residents. These activities can include community-based esports tournaments, digital exercise programs, and educational workshops that introduce residents to the benefits of digital sports and active lifestyles.

The public sector's involvement in these grassroots activities ensures that the digital transformation of sports and exercise is inclusive, accessible, and tailored to the needs of local communities. By investing in local infrastructure, municipalities can create environments that encourage participation across all age groups and demographics.

Furthermore, cities can play a crucial role in promoting digital literacy and ensuring that residents are equipped with the skills and knowledge to engage in digital sports and exercise safely and effectively. This could include offering training programs for local educators, coaches, and youth leaders, as well as organizing events that showcase the positive impacts of digital sports on physical and mental well-being.



These grassroots activities, such as youth work, local esports clubs, and school-based programs, are critical areas where the city can have an impactful effect. Cities can actively handle and develop these initiatives, recognizing their potential to shape a thriving digital sports community. However, there is significant potential for collaboration with clubs, companies, and other private entities in the following ways:

- 1) **Educational Partnerships:** In many regions, particularly in Finland and across Europe, it is uncommon for schools to employ dedicated esports coaches. Therefore, the most realistic way to develop esports activities within schools is through partnerships with companies or esports organizations. For instance, Espoo has collaborated with ENCE Esports to enhance esports courses and programs. This partnership has included hosting small-scale events and bringing in top-level lecturers to cover topics such as esports coaching, esports business, and digital marketing. This collaboration not only elevated the educational experience but also bridged the gap between academic learning and the professional esports industry.
- 2) **Skill Development and Mentorship:** By partnering with local esports clubs and companies, cities can create opportunities for students and young people to gain hands-on experience in digitalizing sports and exercise. These partnerships are able to provide mentorship programs, workshops, and training sessions that help participants develop both

their technical and soft skills, making them more competitive in the rapidly growing digital sports sector.

- 3) **Joint Community Initiatives:** Cities can work together with private entities to organize community events and initiatives that engage a broader audience. These joint efforts can include local tournaments, exhibitions, or public workshops that not only raise awareness of digitalized sports and exercise but also promote healthy digital lifestyles. Through the benchmarking journeys across Europe, the project noticed that this approach is one of the most popular ways for cities to engage with new phenomena, like esports. Such collaborations foster a strong sense of community while simultaneously supporting the growth of local businesses and organizations.

The Importance of Game Education

Game education is crucial because it helps establish healthy gaming habits, particularly when esports becomes a significant hobby. Cities can prioritize game education through youth work and schools, as it equips young people with essential life skills, such as self-management and decision-making. Gaming is an integral part of many people's lives, and by addressing this phenomenon, cities have a unique opportunity to engage with large audiences in meaningful ways.

Esports and exercise gaming are deeply embedded in gaming culture. They present an incredibly powerful opportunity for cities to be involved in guiding children and young people in a positive direction. By integrating game education into existing city services, such as youth programs and school curriculums, cities can play a vital role in shaping how young people interact with and benefit from the digital world. This approach not only supports healthy gaming habits but also helps young people develop the skills they need to thrive in a digital and connected world.

While gaming can pose challenges and be problematic for children and youth, it's important to recognize that for most, it is simply a hobby. By educating children, youth, and parents through game education, we can make a meaningful change in people's lives. We can conclusively say that gaming as a phenomenon is not going anywhere — it is here to stay. Therefore, it is up to us to adapt and ensure that our approach to gaming is positive, informed, and supportive.

The Role of Private Entities: Driving Innovation and Business Development

While the public sector focuses on grassroots activities, the private sector will most likely be the driving force behind the innovation, commercialization, and scaling of digital sports and exercise. Private entities, such as technology companies, esports organizations, and fitness startups, have the resources and expertise to develop cutting-edge solutions, build state-of-the-art facilities, and create new business opportunities within this rapidly growing industry.

Private companies are uniquely positioned to invest in the research and development of new technologies, such as virtual reality fitness experiences, smart exercise equipment, and esports platforms. By leveraging their ability to rapidly prototype, test, and bring products to market, private entities can push the boundaries of what is possible in digital sports and exercise, creating new opportunities for both consumers and businesses alike.

Conclusion: A Symbiotic Relationship for the Future

The responsibilities between public and private entities in digitalizing sports and exercise are complementary and mutually reinforcing. By focusing on grassroots activities, cities and municipalities can ensure that the benefits of digital sports are widely distributed and accessible to all residents. Meanwhile, private entities can drive innovation and business development, creating new opportunities and pushing the industry forward.

Together, public, and private stakeholders can collaborate on major events and initiatives that bring global attention to their communities, foster economic growth, and contribute to the overall well-being of residents. In an increasingly digital world, this symbiotic relationship will be key to unlocking the full potential of digital sports and exercise, ensuring that it continues to evolve in ways that are both inclusive and sustainable.



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