

ASSIST Software | Mobile

Innovative solutions for cross-platform mobile applications

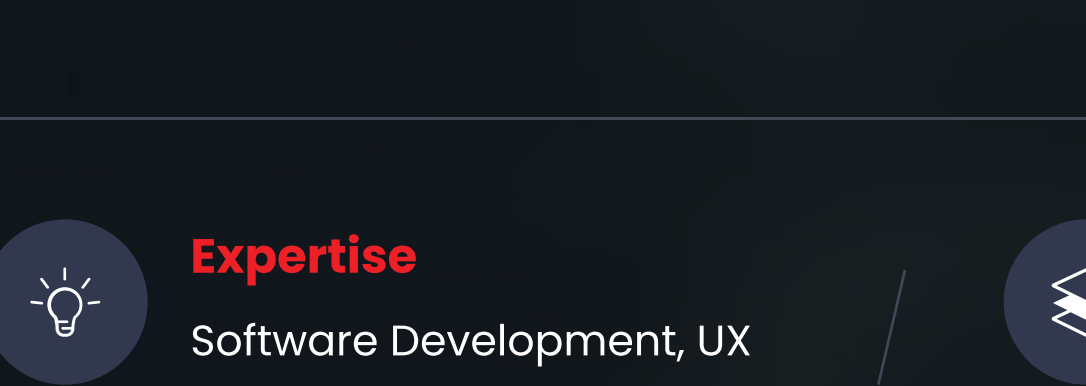
Our integrated team of specialists provides strategy, architecture, design, security, and development for **cutting edge mobile applications**. From standalone applications & games to online social networks, we deliver high-quality products.

We offer a broad range of services for mobile development on leading mobile platforms including **iOS, Android and Windows Phone**. Whether it's **Swift, Kotlin, Android Java, React Native, SwiftUI, UIKit, Fastlane or Flutter**, we have the tools to make your idea a reality!

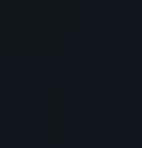
Partner with us to create beautiful, well-designed, and well-optimized **custom mobile applications with a delightful user experience**.

assist-software.net

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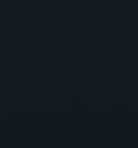


How we helped the world's leading provider of GPS trackers for sport take their services to the next level



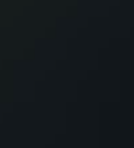
Expertise

Software Development, UX Research, Design, DevOps



Platforms

Cloud, Mobile, Desktop, Web



Deliverables

UI, UX, Strategy, User Research, Mobile apps, WatchOS app, Desktop App, Cloud platform

CLIENT

STATSports Group Limited | statsports.com

Ireland, US | Elite sporting industry | 50-200 employees

Specialties

Sports Performance Analysis, Sports Science Consultancy, GPS Performance Monitoring & Analysis, and Sports Injury Prevention.

Description

STATSports are the world's leading performance wearable technology, as used by the world's top football clubs including Manchester United, Liverpool, Manchester City, Spurs, Juventus and PSG. The world's best players use product including Ronaldo, Messi and Mbappe. STATSports also operate in a number of other sports including some of the biggest sporting names in the world, such as The All Blacks, India Cricket and New York Yankees. They operate in over 60 countries, with 700 of the world's best sports teams.

Engagement duration | Projects with ASSIST | ASSIST team size

5 years+ | 6 | up to 20

FEATURES WE DEVELOPED

Cloud and Local Microservices

Cross-platform compatibility

Continuous Integration

BLE and UWB Communication

Architecture & Business Logic

Hardware Communication

Custom Local Installers

Design

DevOps

Azure Provisioning

CMS

Real-time Metrics

Data Privacy

TECHNOLOGIES WE USED



TESTIMONIAL

Vlad Odrocol
project manager
ASSIST Software

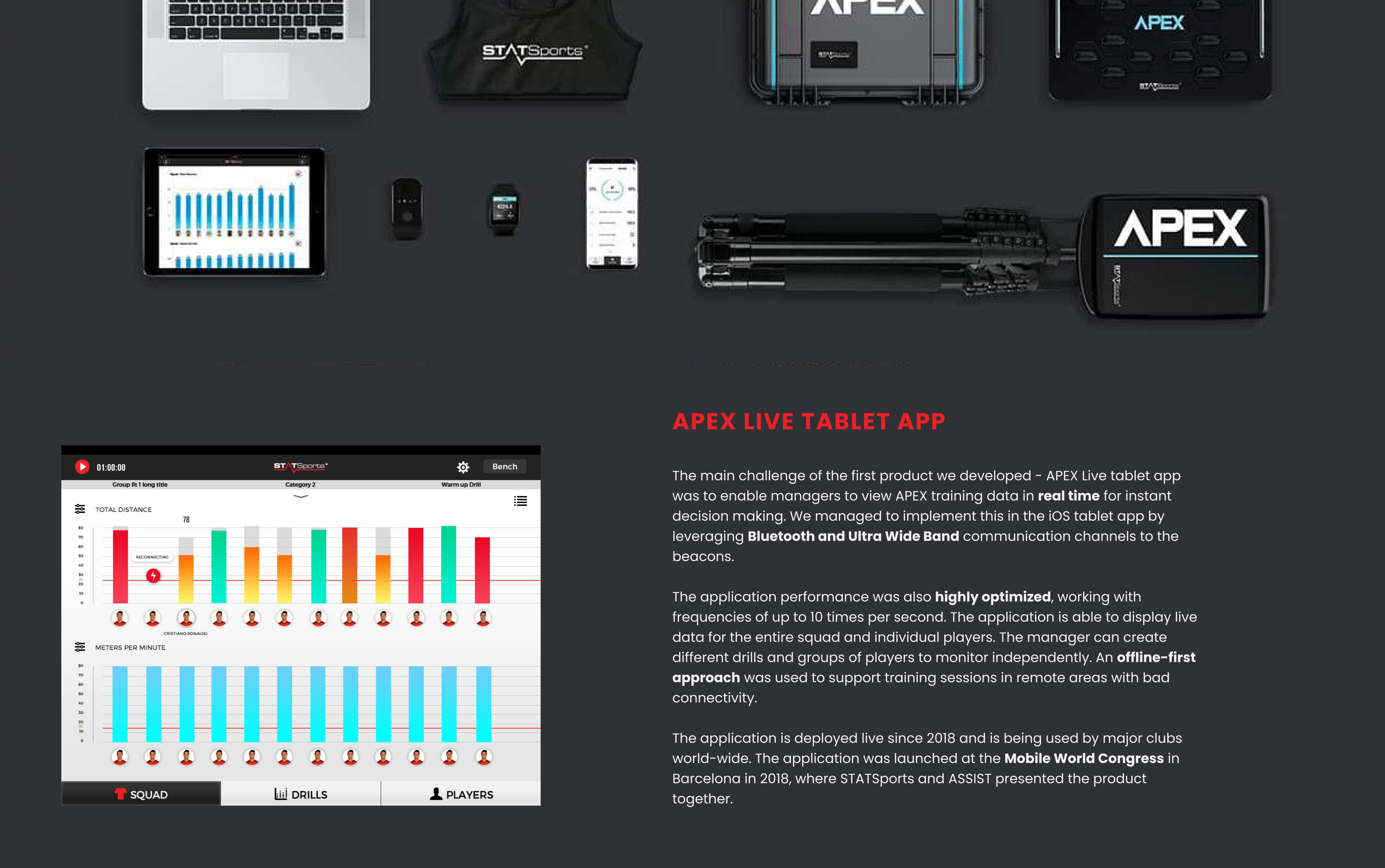
Working on the STATSports applications is a truly rewarding experience. The fact that famous clubs and athletes are using products we helped build makes us proud and motivates us give our best!

FROM A WORKSHOP TO LONG TERM COLLABORATION

ASSIST has been a technological **partner** for STATSports since 2015, delivering a series of digitally varied applications by providing product design, software development, project management and quality assurance services. Over time, we worked with STATSports using **4 collaboration models**: fixed price projects, team augmentation, dedicated teams, continuous maintenance.

Our first interaction with STATSports was a business analysis/ product design workshop, aimed at identifying opportunities. We started the first project, the iOS tablet app – as they were launching a **new generation** of sophisticated Apex devices – with an extended infrastructure, integrating wireless and Bluetooth, not just GPS, and recording 3D physical or metabolic metrics.

Although using only 3 developers, we launched the app successfully and it reached the hands of elite football managers **across the world**. On top of this, we enabled data to not have to be saved manually from the Apex SD card anymore, but for sports scientists and managers to see it live on the mobile devices. From here on, a **multitude of projects** ensued.



APEX LIVE TABLET APP

The main challenge of the first product we developed – APEX Live tablet app was to enable managers to view APEX training data in **real time** for instant decision making. We managed to implement this in the iOS tablet app by leveraging **Bluetooth and Ultra Wide Band** communication channels to the beacons.

The application performance was also **highly optimized**, working with frequencies of up to 10 times per second. The application is able to display live data for the entire squad and individual players. The manager can create different drills and groups of players to monitor independently. An **offline-first approach** was used to support training sessions in remote areas with bad connectivity.

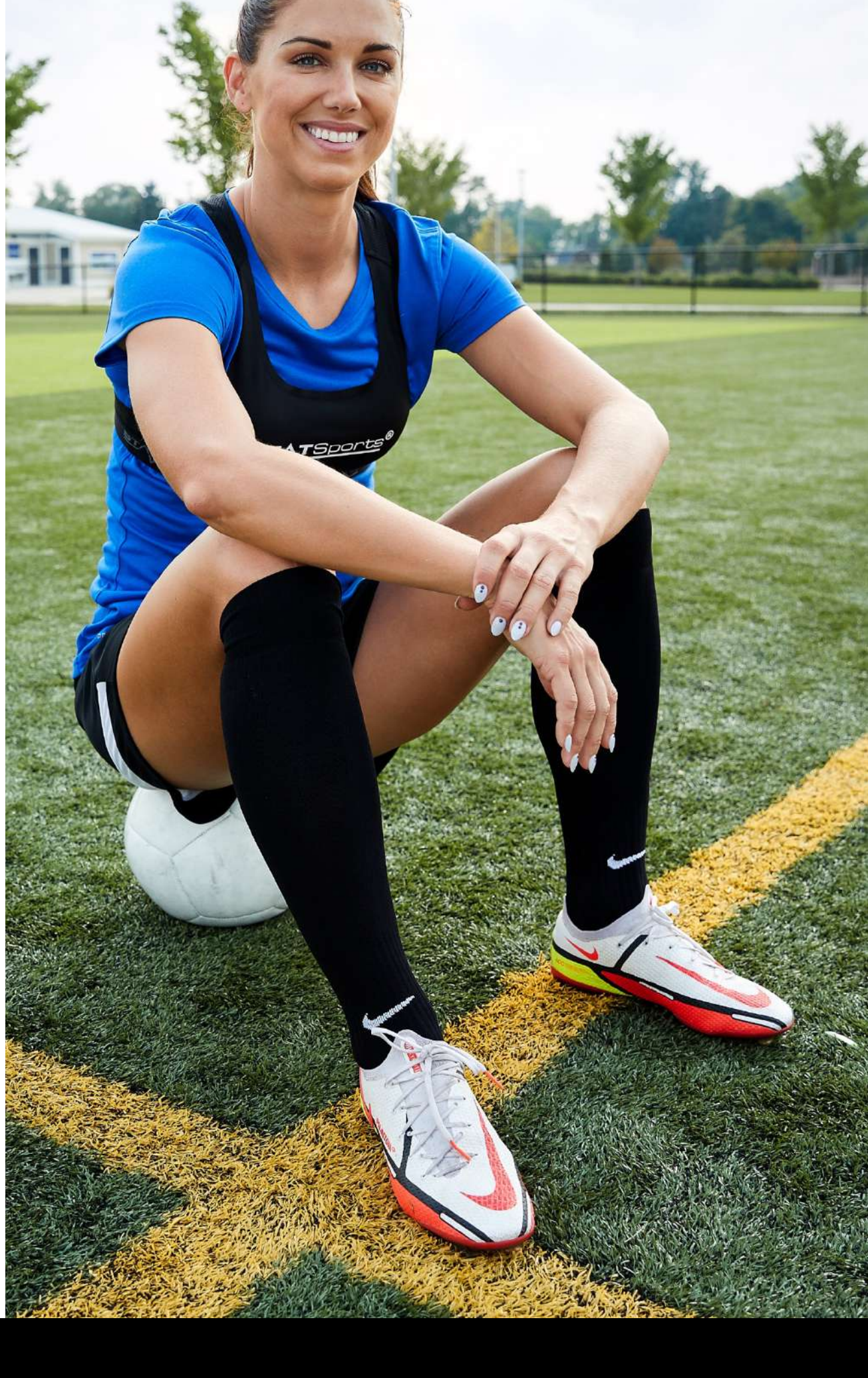
The application is deployed live since 2018 and is being used by major clubs world-wide. The application was launched at the **Mobile World Congress** in Barcelona in 2018, where STATSports and ASSIST presented the product together.

EXPANDING MARKET REACH

After the success of the Elite Tablet App, we helped STATSports expand to the amateur consumer market. ASSIST Software built the mobile applications and the AWS cloud infrastructure for the **consumer version app**.

This connects to one APEX device via BLE, retrieves only a **subset of metrics** compared to the Elite version, but enables users to train in groups, create leagues and compare metrics.

We started with the iOS version, while STATSports was working on the Android one. Soon, STATSports fully outsourced both to ASSIST and we have been **maintaining them ever since**. The applications are built in Swift and Java and they communicate with an API built in NodeJS deployed on AWS using the serverless framework.



Sports tracking data is really beneficial to all athletes, and I'm really thrilled to not only partner with STATSports, but that US Soccer has as well.

Alex Morgan

SONRA DESKTOP



ASSIST kept offering **team augmentation** services for ongoing projects, including the newly revamped Sonra, cross-platform Angular web app, wrapped in Electron and using a local microservices based architecture.

The front-end was built by STATSports, with ASSIST developing most of the 45 microservices written in .NET Core 2.1.0 which are **cross-platform** (Windows and Mac). We also built a custom installer, enabling local download and installation on desktop machines.

A challenge was ensuring cloud data isolation for each club as its transfer and sync for Sonra was different than the consumer app's ecosystem (a lot of users with little data versus less users with big data).

We had to deploy a multi-tenant version using Azure, to ensure **data privacy** for elite clubs. Using an offline-first approach as well, most of the microservices also run locally.

In terms of **Azure provisioning**, ASSIST worked using Azure Active Directory, Auth0, Key Vault, SQL Server, CosmosDB, Storage Account, MySQL etc. We also built a **CMS** using .NET Framework 4.7 and C# 7.3 which manages tenants, permissions and configurations for the microservices.

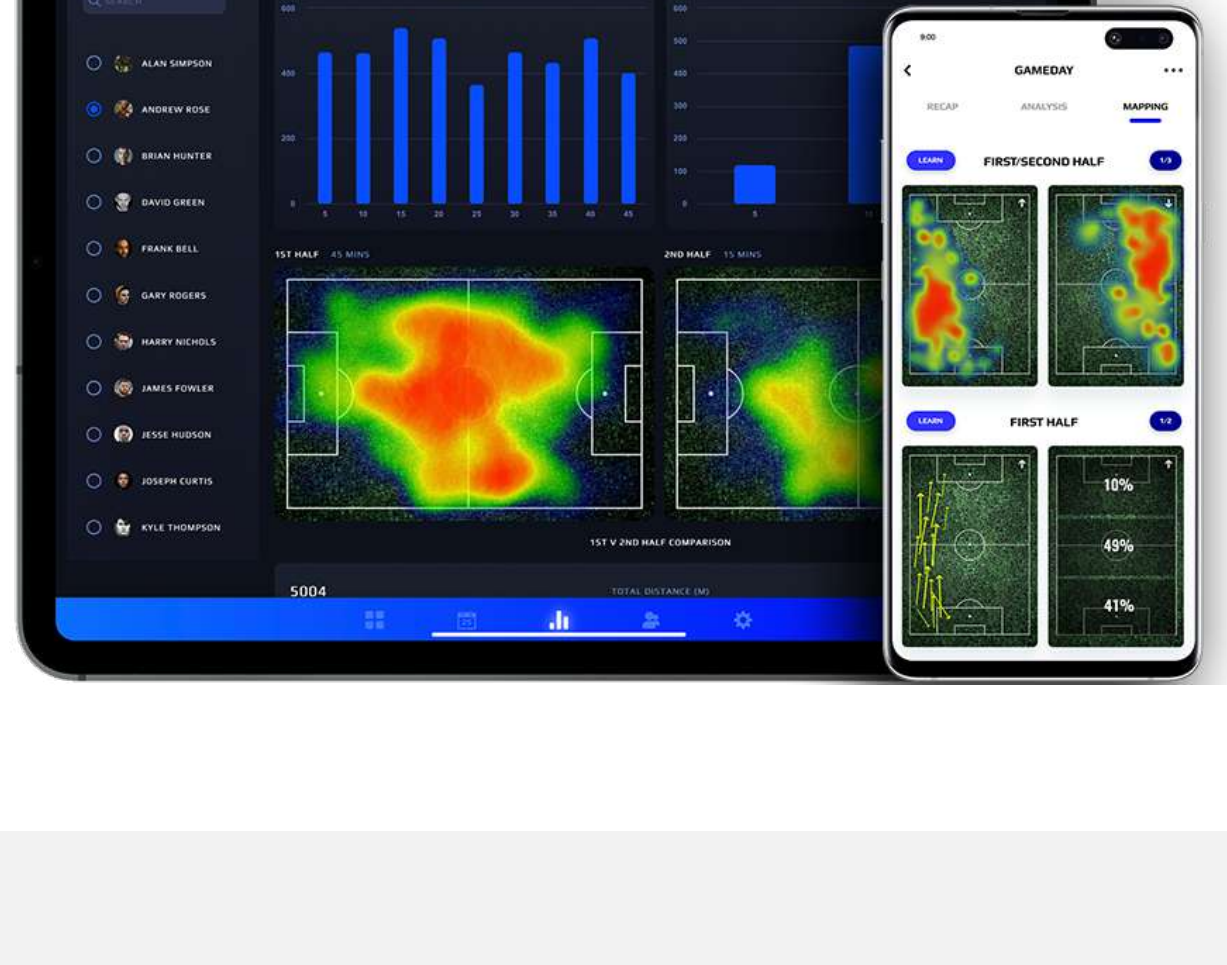
We are also involved in architecting the Cloud solution, performing cost simulations as well as setting up the **continuous integration** environment using Azure Team Foundation Service.

COACH HYBRID APP

The third expansion initiative was also one of the most successful – a hybrid coach app for sports academies, where we **worked as one team** (STATSports on frontend and ASSIST on the logic & network).

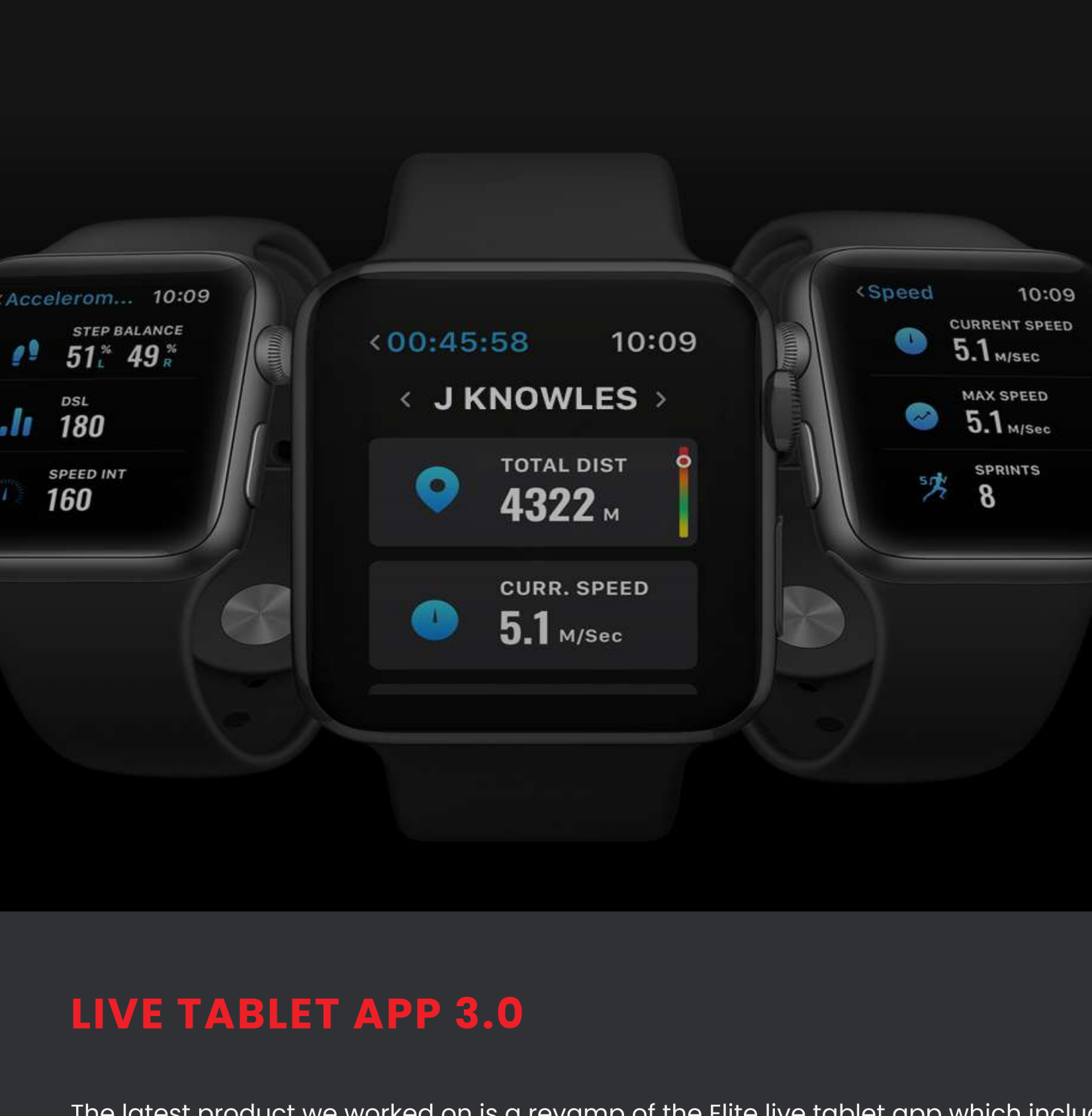
The coach app aggregates and manages data from multiple consumer applications – coaches are now able to access the data from consumer users, set up training schedules and compare performances between players.

Our team helped STATSports develop the entire backend infrastructure and API based on AWS and Serverless as well as building the **architecture and business logic** for the hybrid mobile application in Angular and wrapped inside Ionic Framework.



WATCHOS APP

ASSIST Software built entirely from scratch the Sonra Watch app for WatchOS 3 to 5. The application is one of the first watchOS apps built using the new programming language from Apple – **SwiftUI** – and can connect directly to the APEX devices and receive data via BLE.



25 real-time metrics

Sonra Watch app displays 25 real-time metrics split into Distance, Speed, HR & Accelerometer group.

Receive Threshold Notifications

Receive notifications with haptic feedback when players reach their threshold.

Individual and Global thresholds

Set individual or global thresholds for each player and monitor how they perform with threshold scales.

On Board Metric Processing

Metrics are calculated and processed on the Apex device and transferred to the Sonra Watch app via Bluetooth, ensuring no data will be lost when players go out of range.

Fully customisable

Set your preferred unit of measurement and custom threshold scale.

LIVE TABLET APP 3.0

The latest product we worked on is a revamp of the Elite live tablet app which included numerous usability improvements and a complete refactor in terms of design.

The product was launched at the ICC in Belfast City on 20th of August 2020.



ONE OF OUR LONGEST AND MOST REWARDING PARTNERSHIPS

Our cooperation with STATSports is one of our most fruitful but one that also came with its challenges – from the multitude of technologies that we had to use, manage, and introduce their team to, syncing with the hardware team and sports scientists equally, to managing communication remotely for extended periods and knowing when to add in-person workshops. But the results are also some of our most valued:



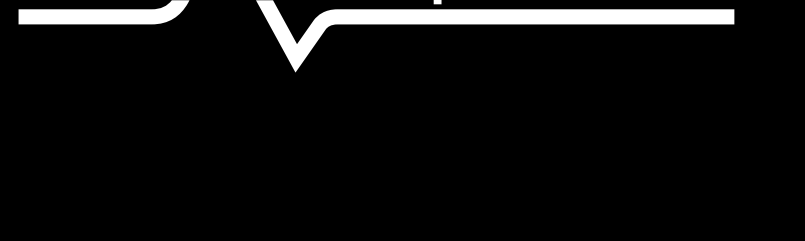
Worldwide professional **exposure**, actively adding business value along the way.



Being one of the **first** to develop an app using Apple's SwiftUI (and demo at an exclusive Apple event in Paris).



Participating at MWC Barcelona **alongside** STATSports, where we promoted our services at the same stand.



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Advancing the Edutainment concept by creating the English learning platform for the digital generation, with over 1m users

- Expertise**
Custom Software Development,
Game Development
- Platforms**
Web, Cloud, Mobile
- Deliverables**
Web app, Android & iOS
Mobile apps, Mobile games
- Project Type**
Dedicated team

CLIENT

- Entertainment Learning
- english-attack.com
- France
- Education
- 11 - 20 employees

Specialties

e-Learning, EdTech, Training, Language Learning, Charter Schools, Edutainment

Description

Entertainment Learning was created to leverage the power of digital entertainment to transform the way people learn. English Attack is a Web 2.0, entertainment-driven English language learning platform.

- Engagement duration
8 years*
- Projects with ASSIST
3
- ASSIST team size
up to 15

FEATURES WE DEVELOPED

- SEO Optimisation
- Mobile games
- Custom JavaScript plugins
- Authentication
- Content management system
- Multilanguage
- Accessibility, Text-to-Speech
- Advanced security
- Offline mode
- Payment processor
- SaaS

TECHNOLOGIES WE USED

- jQuery
- PHP
- Amazon S3
- Amazon S3
- android
- iOS
- unity
- adyen
- amazon cloudfront
- MySQL
- node
- VIDEO.JS
- WebGL
- SALTSTACK
- Linux
- Speech
- mongoDB
- Drupal

A DIFFERENT APPROACH

MULTIPURPOSE

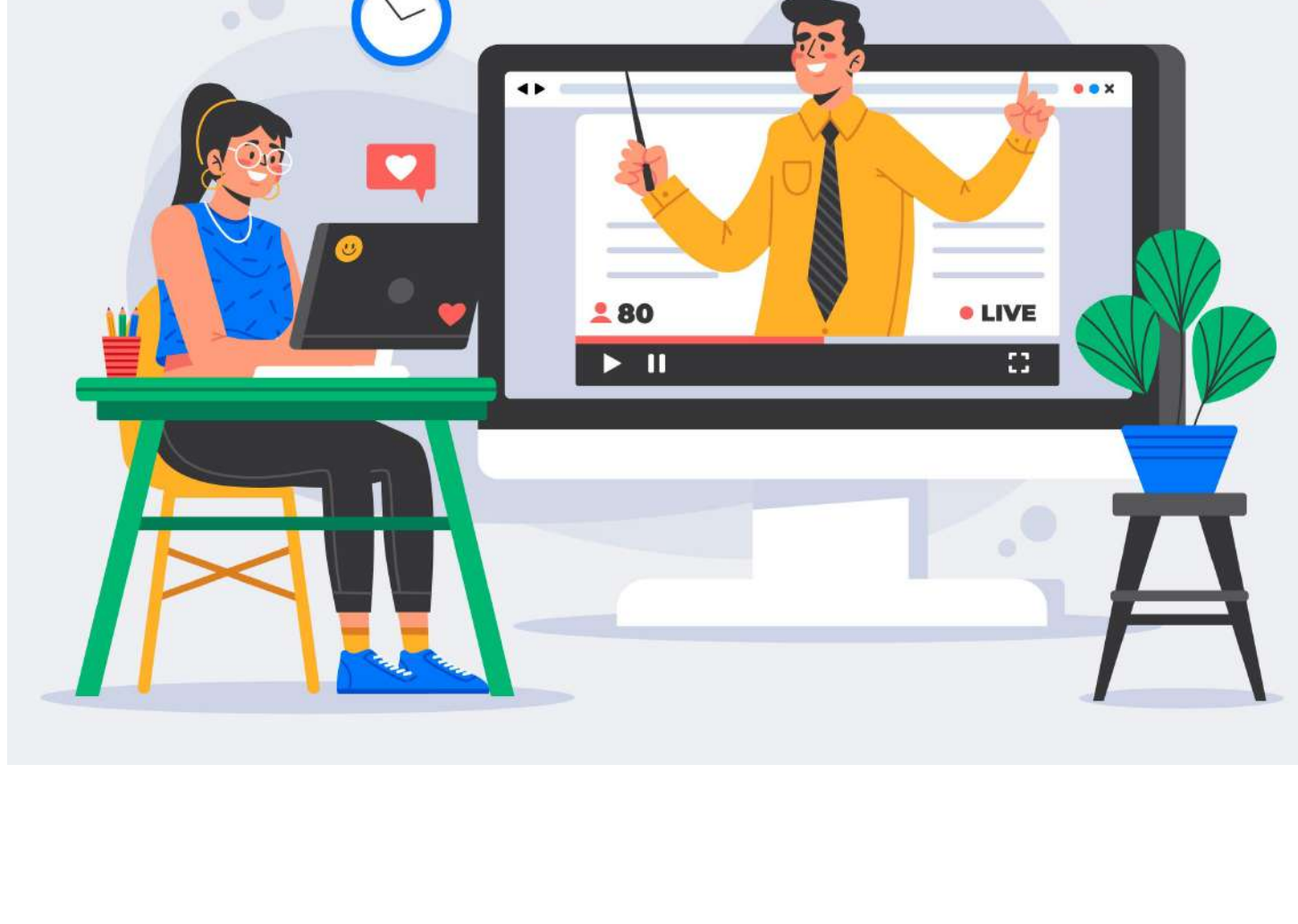
Entertainment Learning disrupts language learning with gamified short-format experiences. Its flagship service, English Attack! creates true innovation in this \$35 billion market with a 100% entertainment-driven approach. Its aimed not only at **students** - complementing classic forms of training - but also at **schools, corporations** and **governmental organisations** promoting multilingualism.

FULLY DIGITAL

English Attack! is the first English-language learning service specifically designed **for the digital generation**. It achieves this through immersing users in real everyday English via interactive lessons based on clips from movies, TV series, news reports, music videos; professionally produced casual games; visual dictionaries; and a global social network of English learners.



NOTABLE FEATURES



- Advanced **Accessibility** Features (text to speech, audit)
- Multilanguage** interface (~30 languages including Chinese, Arabic etc.)
- Multilanguage learning content (text to speech per language)
- Bespoke CMS** for translators and for Content editors
- Advanced **SEO** Techniques for engaging new users
- Security** against attacks and hardware failures
- Continuously **optimised performance** to adapt to the increasing number of users
- B2B module**, for organizations to manage users, progress and centralize access

TECHNICAL CHALLENGES

PERFORMANCE

With most users being logged, scaling performance was uphill. We used Salt's **automatic deployment** to configure servers in minutes. 4-Tier architecture scales horizontally with Load Balancers, Web apps, Storage and Databases.

For failure, an identical server is activated. We also **optimized** website performance with CDN, special caching techniques and maintained messages flow to the database with Amazon SQS.

NEWSLETTERS

Personalized newsletters were needed, so an external service could not be used. The system must send many emails in a short time, avoiding the Spam folder.

To accomplish this, a Python backend was developed to send emails via Amazon SES. Currently, the service can send 250k emails/hr with **flexible size limitation** - made possible by the asynchronous API from Amazon.

MOBILE OPTIMIZATION

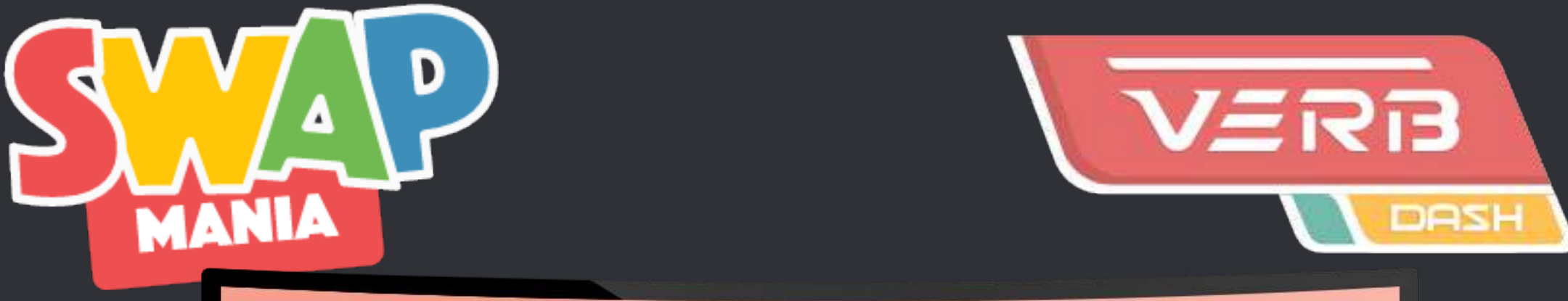
Given the large audience and number of different mobile devices, optimization involved **intensive testing** and workarounds. HTML5 has been used extensively but on some older browsers we had to provide separate support.

Right now, the website and games work on a large majority of devices (phones, tablets with Android or iOS). The most popular devices were used in-house to provide **reliable** tests.

EXPANSION

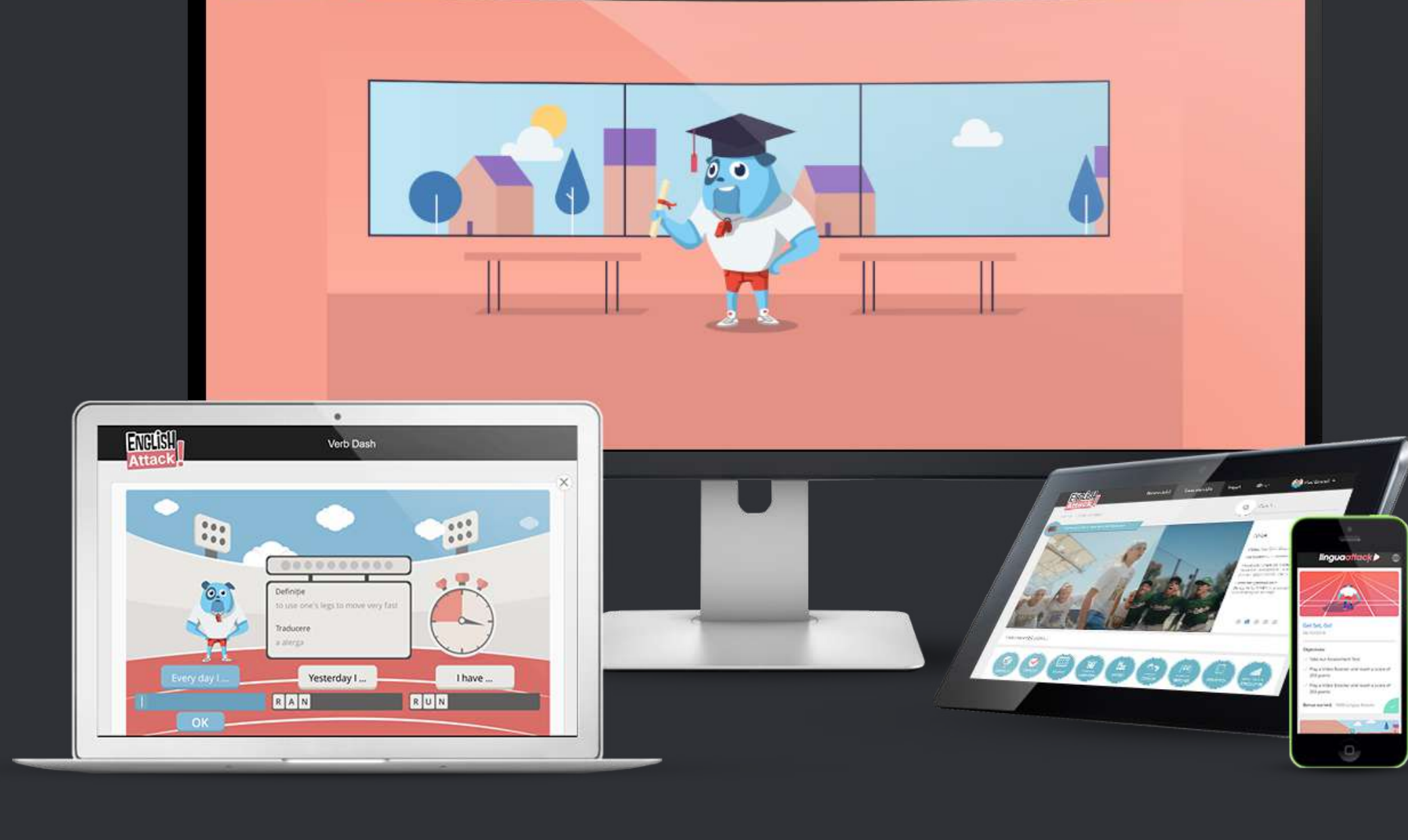
MOBILE GAMES

We also developed two games: Verb Dash and Swap Mania. These were built in **Unity** and we contributed to the **game logic** to help the user reach the level of repeat exposure for **long-term memorization**.



LINGUA ATTACK

We recently launched a new product related to learning English called Lingua Attack! This is an extension of English Attack! which offers **German, Spanish, and French** content as well.



COLLABORATION MODEL

We used the SCRUM methodology, an **Agile** software development framework. This enabled **flexible** development while maintaining feature visibility and control for the client. All code is under revision for managers to follow and review changes.

The project development team includes **many skills**: from game design, frontend, backend to database and server optimizations. Although challenging to manage all, thanks to the results Entertainment Learning has been a client for over **6 years**, seeking to bring new features and latest technologies to the platform.

TESTIMONIAL

- This is to attest that for nearly a year now we have had a close relationship with ASSIST Software SRL, based in Suceava, Romania, for a range of product and service development issues related to our edutainment web service, English Attack!*
- The relationship with ASSIST has evolved over time from sporadic product development to a full R&D and future functionality development and continuous improvement process, so much so that we think of ASSIST more as in-house development team than as an outside, occasional supplier.*
- The team at ASSIST, headed by Gheorghe David is a pleasure to work with: always looking for faster, smarter solutions and ready to provide extra effort and problem solving whenever required. They are professional, reliable, technically extremely competent and work well with a wide range of online collaborative tools and protocols.*
- I have no hesitation to recommend them to anyone needing high-end software development delivered on time and at the agreed-upon cost.*

Paul Maglione
CO-founder
Entertainment Learning
at English Attack

SUCCESS HIGHLIGHTS

- Over **one million** people across 30 countries have already learned with English Attack.
- The platform is also at the heart of QIOZ, a free language learning service launched by Ile-de-France (Paris Region) for **9m citizens**.
- Passed **security audit** from Orange Cybersecurity Team.

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Our entirely in-house and free adventure mobile RPG using Unity 3D, with no ads or microtransactions

- Expertise**
Mobile Game Development, Design, Unity 3D
- Platforms**
iOS, Android
- Deliverables**
Fully-fledged mobile game
- Project Type**
Internal, R&D

R&D SUMMARY

- Elly & The Ruby Atlas
- Create an in-house next-gen mobile game
- Unity 3D, Game design, Skills enhancement
- Mobile Games

Potential uses

Promote Romanian game-development industry, Portfolio development

Context

Develop a mobile game using high production values and AA/AAA pipeline, integrating the latest technologies and which can be used to promote our Unity expertise, since most of our projects are NDA-protected. The offline RPG is a tribute to single-player focused games from before, emphasizing the lost concept of pure gameplay.

Time to alpha **12 months** Time to final **up to 23 months** ASSIST team size **5-10**

TECHNOLOGIES WE USED



FEATURES WE DEVELOPED

- Semi-open world
- Reflex-based combat system
- Supply & Demand trade system
- Voiced-over narrative
- Full Ship upgrades & customization
- Google, Apple integration
- Isometric base-building and management
- Push notifications
- Inventory & Crafting systems
- Online leader boards with Facebook Sign-in
- Unique story missions
- Rogue-like arena game mode

GAMEPLAY & STORY

Elly and the Ruby Atlas is a side scrolling **action-adventure RPG** game offering the experience of being a strategic explorer in the age of pirates.

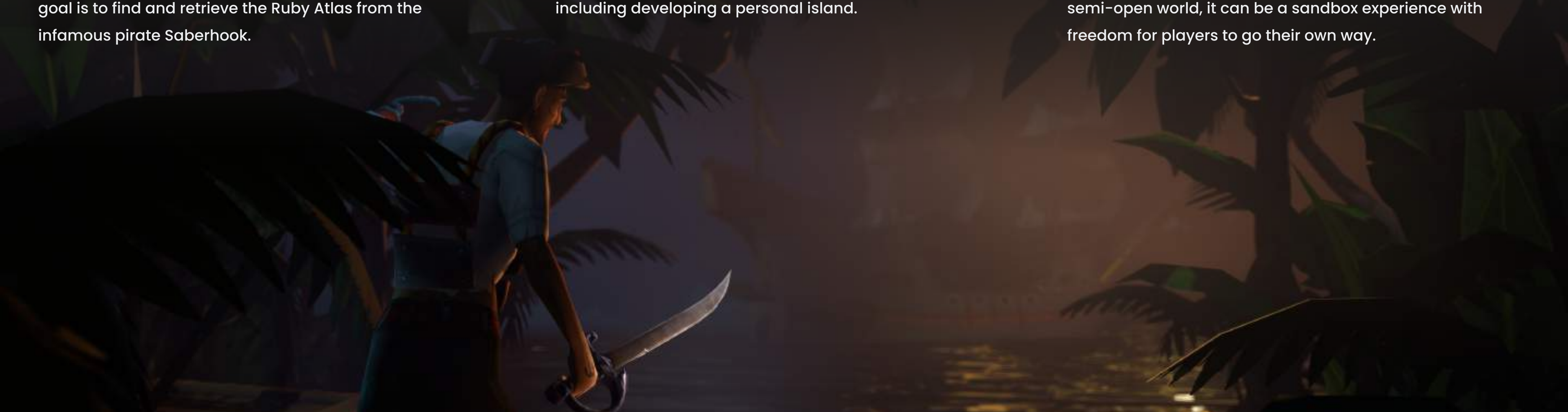
The story is set in a fictional tropical world and the player takes the role of **Elly, a young captain** of a carrack, whose goal is to find and retrieve the Ruby Atlas from the infamous pirate Saberhook.

The game is designed around **3 gameplay pillars**: action-oriented combat, a supply and demand trade system and highly customizable player ship.

It has a **strong focus on exploring**, bolstered by **trading** for profit, **crafting** new items and city **building** sub mechanics, including developing a personal island.

There is also a **narrated** linear **storyline**, driven forward by the player completing certain missions highlighted on the world map.

Each mission has a narrated backstory and a special loading screen. As the game is a **hybrid of subgenres** and semi-open world, it can be a sandbox experience with freedom for players to go their own way.



A DIFFERENT DIRECTION

Developing a retro-feel game out of passion and nothing else

Elly and the Ruby Atlas was developed as a **tribute** to the times when games were single player focused and less "pay to win". Not only is the game free to play, but there are also no extra features or items you can buy, and there is no plan of adding anything of the sort in the near or distant future.

With this adventure RPG, ASSIST Software opens the path for more video games to be developed in Romania while also taking a different - baffling to some - approach to the current gaming landscape by not making any revenue, but instead emphasizing the **lost concept of pure gameplay** through:

- no micro-transactions
- no in-game ads
- continuous free updates



TRADE & TRAVEL

The game's main loop revolves around **roaming the world** - there are 20+ towns for the player to discover, each with their own economy, history and resources that are produced and consumed:

- there are 2 factions that fight over control: pirates and colonists.
- the price of each resource is determined by the supply and demand rules.
- there are 10 resources in total that players and AI trade ships can buy/sell for profit.



The travel system has an **encounter component** (wrapped around a concentric difficulty "ring" of the world map) that is basically a stat check for the players' ship with the following possible events:

- pirates that will plunder your ship resources, damage the ship and the crew.
- storms that will ravage through the ship health and the crew.
- debris (positive encounters) in which you can find resources floating in the seas.

COMBAT & PLATFORMER MECHANICS

The platformer component is a stripped-down version of classic games with focus on having a little breathing space between the combat checkpoints. The fights are designed to be **reflex- and skill-based**, with the player having the following combat options:



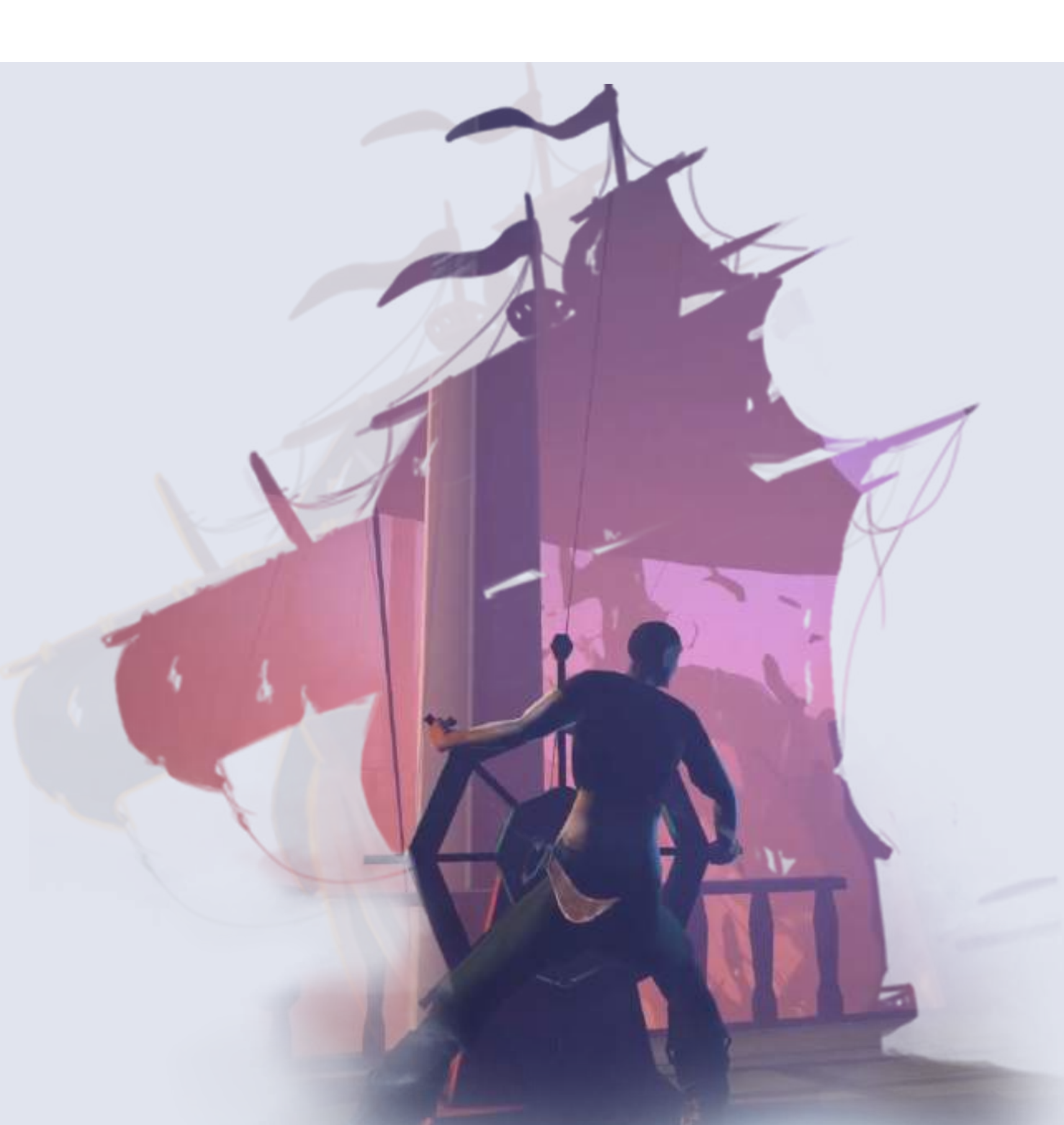
- 2 types of attack (targeted on one of 3 body parts): **Light** attacks are faster and do less damage while **heavy** attacks require a charge time for extra damage.
- block** enemy sword attacks until the stamina bar is empty.
- stamina** resource for managing attack and block actions of the player.
- status effects** (stun, bleed, cripple). Hitting multiple times in the head activates the stun, bleed for the body and cripple for the legs.
- sword and gun combos** (smart gestures on the screen) that are unlockable by the AI. The gun has the special ability to break armor pieces of boss enemies.

SHIP COMPONENT

There is a fully **customizable** and fully **upgradable** ship that one needs to take care of so that they can travel the seas and withstand hazardous weather and raids. The player needs to recruit crew members and upgrade their ship to **maximize trading profits**.

The time required to finish a journey, the cost of the crew and even the probability of negative encounters are in close **correlation** with the ships upgrades, the number of crew members (for achieving 100% efficiency of the ship) and the items that are on the main character.

- Functional upgrades**
 - cannons
 - sails
 - cargo hold
 - crow nest
 - hull
- Crew**
 - affects the ship's functional components efficiency
- Ship forge**
 - create different rarity levels items from recipes
- Aesthetics upgrades**
 - color of sails
 - crests
 - figureheads
 - hull paint



TECHNICAL DETAILS



The game has been developed in Unity 3D engine, targeting tablets & phones for both iOS and Android. The **Universal Render Pipeline** is used for optimizing the game and to give the developers flexibility to create **custom shaders** and improve the stability & **performance**.



Elly & The Ruby Atlas is at its core a 3D application, but nevertheless a **mix of 3D and 2D** has been used for performance and gameplay. The 2D skeletal animation of the game was built in **Spine**, a tool which we have used before for our **Hooman Invaders** tower-defense game.



A GAME PATCH THAT'S WORTH IT

It can be daunting to realize that the **fanbase** you've managed to build might eventually drift off...and not because the game is bad but because it slowly becomes boring after a player goes through the majority of the content.

Encouraged by the interest and cheers coming from the mobile gaming community, ASSIST decided to **expand** Elly's universe with a **major update**, experimenting with game mechanics and offering more hours of content to tackle and conquer.

Player Island

Having the ability to create a **personal base** builds a connection between the player and the game. 15 new building of 3 types (core, production, decoration) have been added.

Mechanics

A random **buff system** for beating boss enemies at certain checkpoints gives the player the flexibility to have custom experiences and **strategies** for each playthrough. Offline and online mode are available, the top 10 players receiving extra special currency to spend on the Black Market.

Producing goods

The New Meridian update enables production of the 10 trading commodities via specific buildings, with 3 available upgrades to **increase production** rates.

Tavern

In this building, a set of short **minigames** will be available for players to spend their time and gold. Currently, a rock-paper-scissors game is implemented.

Arena

The core building where players can prove their combat prowess in a **rogue-like beat-em-up game mode**. Winning fights offers ascending rewards, as well as (optional) **Online leader boards** using Facebook login.

New virtual currency

Even if the game makes no money in real life, the player can make in-game gold. **Doubloons** are the reward for competing in the Arena - a new and specific-to-player-island currency that is used to purchase legendary items from the **Black Market**, another core building.



SUCCESS HIGHLIGHTS



100.000+ combined total downloads



Players from 176 different countries/ regions



4.5 Stars + Reviews on all platforms

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