



KIWAMI R&D GROUP

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PORPOSAL

For the Design, Development, and Implementation
of the Family of Mobile Apps

Sports. The First Steps

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Executive Summary

According to the Sports & Fitness Industry Association (SFIA), over 26 million people play basketball in the U.S. alone. About 13 million people play American football and almost as many people play baseball. A traditional swordcraft Kendo is practiced by 1 million people in the Japan Self-Defense Forces only.

Yet, many of talented athletes neither made their way to the major league nor were awarded athletics scholarships because of mistakes that became ingrained at initial stages of training. Any top-tier coach knows that correcting mismastered skills requires strenuous efforts both from an athlete and a coach and oftentimes does not produce the desired results.

The Sports. The First Steps family of applications is designed to solve this problem from the very first training. Intended for beginner athletes, the applications help evaluate on an ongoing basis the accuracy of mastering basic and special skills in real time and correct mistakes immediately as they are made.

Initial data are captured using the computer vision technology, and then processed using an unparalleled expert system developed by Kiwami Group.

We offer to federations, clubs, and sports centers our services on design, development and implementation of comprehensive solutions that will help unify the training process by separate athletic disciplines. The Sports. The First Steps family of applications will allow conducting qualification tests for all beginners anywhere in the world.

Competition

Currently, there are no mobile apps and computer systems that allow evaluating the accuracy of the performance of motion exercises in real time. Studies conducted by the Independent Nonprofit Organization Russian Quality System (Roskachestvo) in 2017 confirmed that. All of the existing fitness apps merely provide videos showing exercises with no ability to evaluate the accuracy of their performance.

The existing motion analysis-oriented software such as Dartfish, Kinovea, Video4coach, SiliconCoach, QuinticSports, SIMI® provide high-end image-based motion capture and analysis systems. These systems process captured images after exercises are performed when an athlete physiologically forgets mistakes made and actually may not match his motions and the motion pattern.

In addition, these systems impose special system requirements to a PC, a video camera, and a motion capture location. In other words, one requires a specially equipped studio for making a proper video that could be then processed. The need to engage a coach for data analysis is a significant weakness of these systems that limits the number of end users. In fact, the complexity of data interpretation makes these systems useless both for beginner players and their parents and practicing coaches of school and neighborhood sports teams.



A key priority for Kiwami R&D Group is the availability of our app available to anyone who wants to develop proper skills. With our proprietary technology, our app can run on most common smartphones with slow Internet connection and generate reports and recommendations that could be easily understood by the youngest athletes.

At Kiwami R&D Group, our confidence in the success of our products is based on synergy of deep insight into the training process, research and technology innovations, and understanding of future trends in the development of science and technology, and global financial flows. Our belief in victory is based on clear understanding of urgent needs of beginner athletes who are interested in quick and effective development of in-demand professional skills and ability to provide our developments from anywhere in the world to the best experts and get their advice.

Functionality

A light or demo version of the app can calculate ideal and real personalized anatomical and physiological models of an athlete based on answers to the questionnaire and initial non-personalized data extracted from a series of images. Initial data are captured using the computer vision technology, and then processed using an unparalleled expert system developed by Kiwami Group.

The expert or analytical system provides data clustering, determines the optimal pattern of training, evaluates the accuracy of performance of technical requirements, keeps track of the progress, analyses the progress and makes corrections to the optimal pattern of athlete training in short, medium, and long term. Based on tests, it also assembles athlete's sports anamnesis.

The potential functionality of the apps will be as follows:

1. Detect unique properties
2. Train classical basic skills
3. Do special exercises effectively
4. Develop special skills (develop alternative perception, speech, breathing, communication with media, and so on)
5. Evaluate and correct team play skills
6. Evaluate risks and personal security
7. Run the safe training skill mastering program
8. Select a personal training trajectory
9. Select a personal development program
10. Evaluate motor qualification tests.

An extended version of the app allows to assess athlete's mental determination and psychological determinants based on his behavior patterns revealed during the use of the app, anatomical, physiological, biomedical parameters. For example, one can evaluate the level of focus or period during which the player maintains maximum focus based on three independent parameters, including precision in movements, heart rate variability, and tension in facial muscles.



The studies by Kiwami R&D Group showed that special training methods allow changing the predominant way of compensatory adaptation to stressful situations and thus improving the player performance and decreasing the total number of mistakes and their scale.

Additional services offered to users of this family of apps include:

- Participation in local federation ranking
- Participation in global ranking
- Subscription to remote professional advice
- Subscription to federation event invitations
- Subscription to federation's special libraries
- Subscription to analytical reports
- Subscription to statistical reports
- Other on customer demand.

The extended version can also include comprehensive analysis of biomedical parameters recorded by additional equipment such as a blood pressure meter, myograph, HRV tracking device, and other medical devices.

Company

On contract signing, Kiwami R&D Group proposes to establish a new legal entity in the country of project implementation.

Project History

An idea to create a platform for self-evaluation of motor skills and mental strength came up in 1998 as a result of collaboration between the System Architect Olga Panchenko and the Strategic Planning Advisor Aleksey Polomskikh. The idea was to give a chance to beginners to match their characteristics and skills against science-based models applicable to specific fields of expertise.

The main challenge was indicating a mistake at the moment it was made so that the beginner could immediately correct it. Such approach would allow reducing time needed to develop the desired skills. Another critical but not less challenging aspect in terms of implementation was building an ideal human anatomical and physiological mathematical model. The existence of such model would allow adapting it to the user potential or modifying it to fit specific tasks and hence improve the training process.

The idea began to take shape twenty years ago with the creation of technology to develop universal and special skills followed by numerous experiments for measuring the efficiency of different training methods. Then, a special training course came along. It was designed to develop qualities and skills that would help people doing high risk jobs such as traders, air-traffic controllers, nuclear power plant operators, etc. cope with stress.

The following step towards the development of an automated system was a joint research effort carried out by the mastermind behind the project Olga Panchenko and the Doctor of Biological Sciences, neurophysiologist Victoria Gorbunova. The research focused on quantitative evaluation of the level of focus, and hence quantitative evaluation of mental determination, and social intelligence.



The spring of 2013 became the starting point of a new phase in the project development. The development of an integrated technology to evaluate motor skills, mental strength using cutting-edge wireless meters and devices started. At that time our research efforts on mathematical formulation of an ideal human anatomical and physiological model began.

Our WAMetr platform was developed as a result of close collaboration with seasoned professionals in healthcare, sports, education, neurophysiology, physiology, mathematics, engineering, and information technologies. After full-blown implementation, the WAMetr platform will give a real chance to all users to fulfill their potential in an optimal way, given that, in today's world, proper skills give competitive advantage and help push the boundaries.

Inspired in 1998, in twenty years our idea is translated into reality in a number of innovative solutions that can radically change the existing approaches to healthcare, sports, and education.

Research

The unification of developed skills is provided through creation of a database containing patterns of basic static and dynamic poses. These patterns are calculated based on an ideal human anatomical and physiological model using an unparalleled expert system developed by Kiwami Group. The ideal model is modified to customer needs.

Proposal and Schedule

The development time of one mobile app is 12 months; payback period is 15 months with superprofit generation in 18 months. Project activities are divided into phases to ensure maximum profit margin for the customer, its confidentiality and information security.

Phase I: Study to standardize the best practices at the initial training phase; development of terms of reference based on obtained data; development and coordination of design documentation; legal support throughout the phase; budgeting and financial audit during the phase I.

Phase II: Development and coordination of a test version of the app; user interface design; user interface optimization; study on adapting and modifying an ideal model to create an ideal digital and physiological model of an athlete; development of methodological recommendations and digital standards for the training process; development of a marketing program; budgeting and financial audit.

Phase III: Testing, trial and adjustment of the app based on sports schools in different countries; scientific and cross-cultural studies; start of app demo version sales; development of instructions teaching suggestions; introduction of the Technical Support.

Phase IV: App enhancement by adding a module that analyzes biomedical data collected using wireless medical devices; development of Technical Support software and its updates.



Benefits and Finance

Let us consider basketball as an example. According to SFIA, over 26 million Americans play basketball. Top NBA players earn about \$20M a year.

So, profit on sales of the app test version at basic license price of \$100 may come to \$100M during the first week of sales, i.e. in a year and a half after the beginning of financing.

Let us consider estimated financing and gains from the design, development, and implementation of a mobile app designed to evaluate the accuracy of performance of technical (motor) requirements to basic movements and shots by beginner basketball players.

In order to shorten the app preparation time for market launch and minimize costs for test and trial, we need to engage high-class specialists for the design and development of the first version of the app. Minimum amount of financing for the design, development, and coordination documentation, and adaptation of the app to a specific sports discipline is about \$3M excluding tax over the period of 6 months.

A key component of successful project implementation is legal support in the course of the project development and implementation, as well as participation in a marketing program. The amount of financing for leading legal counsels may come to \$2M excluding tax over 18 months.

A chance to be seen by top NBA coaches at the initial training phase must be a motivating factor to buy the app. Therefore, the marketing program financing may be reduced to \$2M excluding tax over 12 months.

Minimum amount of financing for coding, debugging, improvement and debugging of service and technical support of the app during the implementation period is about \$2M excluding tax over 18 months.

Development costs, representation costs, and purchase of a minimum set of equipment is about \$1M excluding tax over 12 months of the project implementation.

So, by investing about \$10M you can get about \$100M from sales of the test version. And this is not including profits on the group's entry into the stock market.

Key Persons and Contact Details

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