METHOD AND SYSTEM OF DELIVERING AN INTERACTIVE AND DYNAMIC MULTI-SPORT TRAINING PROGRAM

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ABSTRACT

A system for creating a personalized, dynamic, multi-sport training plan for a user comprises a question generating module; a user input module which accepts user answers to questions generated by the question generating module and accepts other inputs relating to the user; and a processing module which collects and analyzes the answers to the questions and the inputs and thereafter, based at least in part on a calculation of an exponential moving average ("EMA") of said answers, creates a training schedule for each sport, which is dynamically linked to all previous user inputs; wherein the question generating module, by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

Triathlon Growth
GETTING STARTED

1 YOUR GOAL  2 YOUR SPRINT  3 YOUR SCHEDULE  4 YOUR RACE DAY

Answer 3 simple questions and you'll be amazed at what we can do for you.
These questions will help us get you started with your personalized/trident training program.

What is your goal?

☐ New Triathlete
   - I want to complete a triathlon event for the first time.

☐ Experienced Triathlete
   - I have completed an event before.

☐ Lifestyle Fitness
   - I want to train to improve my overall health and fitness.

FIG. 1
FIG. 2
FIG. 4
**EVENT READINESS GAUGE**

- **Can I compete before being “Ready”?**
  - “Ready” increases your ability to identify specific goals in an event with some level of engagement and without injury. Knowing when you should participate or compete in an event is critical to maximizing your performance and mitigating risk.

- **How Does it Work?**
  - Training for a triathlon is focused on advancing through a series of practice programs. You should reach a defined goal in these progression-based events before attempting the next. This Event Readiness Gauge helps you identify the appropriate programming stage.

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FIG. 5
<table>
<thead>
<tr>
<th>WORKOUTS</th>
<th>DIFFICULTY</th>
<th>WELLNESS</th>
<th>COMPUTED</th>
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<tbody>
<tr>
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<tr>
<td>Exercise</td>
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</tbody>
</table>

FIG. 6
DYNAMIC ONLINE TRIATHLON TRAINING

PLAY VIDEO

TRITON

GET STARTED

HOW IT WORKS

TRITON BLOG

ABOUT SIMON WHITFIELD

Triathlon is the fastest growing sport in the world. Find out why.

Learn more about Triton’s simple, yet advanced triathlon training.

Simon’s blog. Follow Simon and his path to the 2012 Olympics.

TRIATHLON STANDARD RACE DISTANCES

A triathlon is a multi-sport endurance event consisting of swimming, cycling and running in immediate succession over standard distances.

- Sprint Sprint Distance Triathlon: 400 m | 18 km | 2.5 km
- Sprint Distance Triathlon: 750 m | 20 km | 5 km
- Olympic Distance Triathlon: 1.5 km | 40 km | 10 km
- Long Course Distance Triathlon: 3.5 km | 90 km | 21.1 km
- Ultra Distance Triathlon: 8.5 km | 180 km | 42.2 km

FIG. 9
**Q&A**

**Does Triton offer a money back guarantee?**

Absolutely. If for any reason you are not satisfied with the Triton training making program, you will receive 100% of your money back! No questions asked. You will obtain a refund within 14 days of your membership.

**How do I cancel or get a refund?**

Simply click on the "cancel" tab, and you will see your refund.

**Can I change plans at any time?**

Yes, you can upgrade your plan at any time. Simply click on the "subscribe" tab on your dashboard and you will see your options.

**How often will I be billed?**

You will be billed monthly, according to the plan you have selected.

**What kind of support does Triton offer?**

Triton offers 24/7 support by phone and email for any general questions or concerns. You will also receive a personal coach via email to answer any questions pertaining to the training program itself.

**What types of payment do you accept?**

We currently accept Visa, Mastercard, and American Express. We do not accept PayPal. If the system ever shows payment errors, you will not be able to make payments via the system.

**Any questions before you sign up?**

If you have any questions about Triton or the trial program, our support team is always available to help you get started.

**FIG. 10**
GETTING STARTED

How many secondary races would you like to compete in?

Select

Select a distance and date for your secondary races?

Secondary Race 1: Select Event Distance: Enter Event Date: Enter Event Time

Secondary Race 2: Select Event Distance: Enter Event Date: Enter Event Time

Secondary Race 3: Select Event Distance: Enter Event Date: Enter Event Time
EVENT READINESS GAUGE

Can I compete before being "Ready"?

Being "ready" assures your ability to participate in an event with some level of enjoyment and without injury. While you can participate at any time prior to becoming your "ready" status on the gauge, your level of data contact and risk of injury may be unknowable.

How Does It Work?

Enjoying the intelligence is based on achieving through a series of completion percentages. Your progress needs a defined point. These programs are tied into the event tasks you can manage through the training plan. Your eligibility to participate in competitions can be managed by the thoughts you use for completing the tasks.
FIG. 16
METHOD AND SYSTEM OF DELIVERING AN INTERACTIVE AND DYNAMIC MULTI-SPORT TRAINING PROGRAM

FIELD OF THE INVENTION

[0001] This invention relates to an interactive, dynamic system for athletic training.

BACKGROUND OF THE INVENTION

[0002] Triathlon (swim, bike, run) is a vibrant, growing sport. According to a 2009 study, triathletes expect to continue their participation and most also expect to increase the number of races in which they compete. There are a number of industry trends developing that are creating increasing interest in triathlon and subsequent demand for triathlon training. The chart shown in FIG. 17 demonstrates the significant and steady growth in triathlon in the past decade.

[0003] On the event side, the number of races sanctioned through USA Triathlon (USAT) continues to climb. Those numbers (which include camps and clinics) have nearly doubled over the last five years, going from 1,541 in 2004 to 3,115 in 2009. The number of actual triathlon races during that time has grown from 897 to 1,891, while duathlon (run-bike-run) races have grown from 277 to 573. Youth events have more than doubled from 193 to 421. Other multisport disciplines, such as aquabike (bikeweight-bike) and aquathlon (run-swim-run) have also seen growth in the number of events offered across the United States.

[0004] Looking at the distances of the races, the biggest growth continues to be at the shorter sprint distances, which have increased from 818 in 2004 to 1,393 in 2009, but growth at other distances (including Olympic, Ironman 70.3 and Ironman) has also been consistent during that time.

[0005] For years, the Sporting Good Manufacturing Association ("SGMA") has been conducting surveys of the U.S. population to see how many people are participating in what sports and how often. Aerobics, badminton, skateboarding, tennis, golf, ice skating, lacrosse, hunting, sailing, football, bowling—the list goes on. The SGMA uses the terms "casual" and "core" to divide the main frequency groups of sport participants. SGMA says the core participants are the main purveyors of "equipment, services and user fees" for a particular sport or activity. A casual participant for triathlon is someone who participated in just one triathlon in a given year, while a core participant was involved in two or more events.

[0006] The most recent SGMA study—released in May 2010—reveals that 1,208,000 Americans participated in at least one on-road (traditional) triathlon in 2009. This total represents 11.1 percent growth from 2008 (1,087,000) and 51.4 percent growth from 2007 (798,000).

[0007] Additionally, the SGMA reports that 666,000 Americans participated in an off-road (non-traditional) triathlon in 2009. This total marked a 10.6 percent increase over 2008 (602,000) and a 37.9 percent growth since 2007 (483,000).

[0008] According to the SGMA, there are 694,000 core on-road triathlon participants in the United States and another 413,000 core off-road triathlon participants. The SGMA defined core participants as athletes that competed in at least two races per year.

[0009] Without a doubt, the sport is growing and thriving and the number of core participants is increasing. However, it is a more complex sport to train within than any of the constituent sports alone. As such, participants turn to third party coaches and other systems to assist them in optimizing their training and performance. There are pre-packaged for "canned" training schedules available. The user inputs some information and a suggested workout program is created. Such plans provide no consideration for the athlete’s level of experience, fitness or goals. Often, the athlete is left uncertain with the schedule proposed and loses confidence in the process due to lack of customization and proper feedback.

[0010] In an attempt to provide training assistance and protocols to a larger group of participants, various training programs have been offered that use a computer to deliver a workout plan. Generalized training programs are also offered over the internet or in stand-alone software programs. To date, these known computerized training programs have met with limited acceptance and success. The known programs typically present a generic training plan that admits of very little in the way of individual optimization. For example, a twelve-week training program for a 10 Km race is presented, offering daily mileage to be run. Some versions offer different levels of the program to accommodate beginning, intermediate and advanced runners, each level offering progressively more difficult workouts. Further, some programs offer some additional customization by detailing the type of workout on each day. A few examples of different workouts would be hill training and interval training (of various kinds). What these known training programs collectively lack is any true customization based on an individual’s current fitness level, athletic background and desired goals. An exercise training program that could offer such individualized training programs through a standard and known internet web browser would be highly desirable. Furthermore, a program tailored to the unique and complex requirements of multi-sport (for example: triathlon or duathlon) training would be even more desired.

[0011] It is an object of the present invention to obviate or mitigate the above disadvantages.

SUMMARY OF THE INVENTION

[0012] The present invention provides a system for creating a personalized, dynamic, multi-sport training plan for a user which comprises:

[0013] a) a question generating module;

[0014] b) a user input module which accepts user answers to questions generated by the question generating module and accepts other inputs relating to the user; and

[0015] c) a processing module which collects and analyzes the answers to the questions and thereafter, based at least in part on a calculation of an exponential moving average ("EMA") of said answers, creates a training schedule for each sport, which is dynamically linked to all previous user inputs; wherein the question generating module, by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.
The invention further provides a computer implemented method of creating a personalized, multi-sport training plan for a user which comprises:

- a question generating module;
- a user input module which accepts user answers to questions generated by question generating module and accepts other inputs relating to the user;
- a processing module which collects and analyzes the answers to the questions and thereafter, based at least in part on a calculation of an exponential moving average ("EMA") of said answers, creates a training schedule for each sport which is dynamically linked to all previous user inputs;

wherein the question generating module by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

The present invention further comprises a computer readable storage medium having computer-executable code encoded therein for:

1) generating user questions relating to a multi-sport training program;
2) analyzing user responses to said questions and using this analysis to create one or more optimal training schedules for each sport, personalized to said user; and
3) modifying said schedule based on ongoing user responses/inputs.

By way of this method and system, users can optimize their multi-sport training programs in a safe, dynamic, and personalized manner. This is in complete contrast to the currently available "canned" programs which provide nothing more than a training calendar with suggested work-out times for specific activities on specific days. Such plans do not provide for dynamic feedback and the use of such feedback in the design of "next" work-outs. This ongoing interaction, dynamism and personalization are critically important in multi-sport training (for triathlons, duathlons, aquathlons and the like) to ensure safety, injury prevention and appropriate endurance and strength building across diverse sports. This method and system further addresses the inter-relatedness of intelligent training for multi-sport events. It is not sufficient that performance in each sport be assessed in an artificial silo. On the contrary, the present system and method, by way of the processing module, and a feedback loop between it and both the question generating module and the user input module, provides an appropriate training balance for and between each specific sport. The system and method 1) intelligently asks questions germane to both overall training and sport-specific training and 2) provides weighted balance to the answers such that appropriate modifications to a training schedule can be made, dynamically and throughout an entire training program.

The present invention will now be described in greater detail with reference to the following non-limiting drawings, in which like numerals represent like elements.

**DETAILED DESCRIPTION OF THE INVENTION**

A detailed description of one or more embodiments of the invention is provided below along with accompanying figures that illustrate the principles of the invention. The invention is described in connection with such embodiments, but the invention is not limited to any embodiment. The scope of the invention is limited only by the claims and the invention encompasses numerous alternatives, modifications and equivalents. Numerous specific details are set forth in the following description in order to provide a thorough understanding of the invention. These details are provided for the purpose of example and the invention may be practiced according to the claims without some or all of these specific details. For the purpose of clarity, technical material that is known in the technical fields related to the invention has not been described in detail so that the invention is not unnecessarily obscured.

In other words, the invention is described in connection with such embodiments, but the invention is not limited to any embodiment. The scope of the invention is limited only by the claims and the invention encompasses numerous alternatives, modifications and equivalents. Numerous specific details are set forth in the following description in order to provide a thorough understanding of the invention. These details are provided for the purpose of example and the invention may be practiced according to the claims without some or all of these specific details. For the purpose of clarity, technical material that is known in the technical fields related to the invention has not been described in detail so that the
invention is not unnecessarily obscured. Similar reference characters denote similar elements throughout various views depicted in the figures.

In the present disclosure and claims, the word “comprising” and its derivatives including “comprises” and “comprise” include each of the stated integers but does not exclude the inclusion of one or more further integers or elements.

In the present disclosure and claims, exponential moving average (“EMA”) refers to a calculated means for corrected analysis of recently used “data” in terms of weight. In other words, this is a type of moving average that is similar to a simple moving average, except that more weight is given to the latest data. The exponential moving average is also known as “exponentially weighted moving average”.

In statistics, a moving average, also called rolling average, rolling mean or running average, is a type of finite impulse response filter used to analyze a set of data points by creating a series of averages of different subsets of the full data set. Given a series of numbers and a fixed subset size, the first element of the moving average is obtained by taking the average of the initial fixed subset of the number series. Then the subset is shifted by “shifting forward”, that is excluding the first number of the series and including the next number following the original subset in the series. This creates a new subset of numbers, which is averaged. This process is repeated over the entire data series. The plot line connecting all the averages is the moving average. A moving average is a set of numbers, each of which is the average of the corresponding subset of a larger set of data points. A moving average may also use unequal weights for each data value in the subset to emphasize particular values in the subset.

An exponential moving average (EMA), also known as an exponentially weighted moving average (EWMA), is a type of infinite impulse response filter that applies weighting factors which decrease exponentially. The weighting for each older data point decreases exponentially, never reaching zero as illustrated in FIG. 7.

In respect to the system and method of the present invention, the use of a EMA calculation means within the processing module allows most the current question feedback and inputs to be (depending on question and weight of said question) given more importance or criticality as compared to previous answers and inputs. As these answers and inputs are delivered to the processing module on an ongoing basis during a training program, accurate, dynamic and individually tailored outputs (updated training schedules for that user) are produced.

By this means, a large volume of data can be calculated and assigned importance with accuracy. For example, large scale data which comprises more than 200 previous days entries can also be exacted calculated and weighted in order to produce the most individually efficient subsequent training schedule for each sport.

It is to be understood that a user input module accepts not only user answers to questions generated by question generating module but accepts other inputs relating to the user. These other inputs include, but are not limited to data from collection devices such as heart rate monitors, energy measuring devices, distance, speed and movement measuring devices and may include inputs from other known training devices (for example, Garmin®, Timex®, Polar®, Suunto®, Nike®, etc. . . .) Such other inputs are not required, and are optional features, providing additional information to the user answers at the processing module.

In one aspect, the present invention provides a system for creating a personalized, dynamic, multi-sport training plan for a user which comprises:

- a question generating module;
- a user input module which accepts user answers to questions generated by the question generating module and accepts other inputs relating to the user; and
- a processing module which collects and analyzes the answers to the questions and inputs and thereafter, based at least in part on a calculation of an exponential moving average (“EMA”) of said answers, creates a training schedule for each sport, which is dynamically linked to all previous user inputs;

wherein the question generating module, by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

Preferably, the question generating module offers to a user, upon first use of the system in a given training regime, a set of base questions to be processed by the processing module, said processing module then producing a first training schedule. The user, after having completed all or part of the first training schedule is prompted by the question generating module to respond, via the user input module, to one or more additional questions, the answers to which are provided to the processing module to generate one or more subsequent training plan(s) based on the user’s periodic feedback. The base questions may include those relating to user’s available training time, desired workout lengths, the current fitness level, experience in each sport, alone or combined, distance goals, and target event dates. As used herein, “periodic” may refer to any time interval which is appropriate to a particular training regime, including, but not limited to hourly, daily, or weekly intervals.

Preferably, the base questions include, but are not limited to those relating to user’s current fitness level, experience in each sport, distance goals, and target event date or dates.

Preferably, the user, after having completed all or part of the first training schedule is prompted by the question generating module to respond, via the user input module, to one or more additional questions, the answers to which are provided to the processing module to generate, based at least in part on a calculation of an EMA of said answers, a subsequent training schedule which is customized to the user and which is fully and dynamically responsive to the inputs received.

Preferably, the user, after having completed all or part of the first training schedule is prompted by the question generating module to respond, via the user input module, to one or more additional questions, the answers to which are provided to the processing module to generate, based at least in part on a calculation of an EMA of said answers, a subsequent training schedule which is customized to the user and which is fully and dynamically responsive to the inputs received.

Preferably, the processing module, in devising subsequent training schedules, factors one or more the following: the inter-relation between the sports, the optimal training requirements of each sport, the age of the user, the physical condition of the user, the mental condition of the user, the
goals of the user, the training time available to the user, the time proximity of the desired event and the event distances.

[0058] Preferably, the additional questions comprise questions relating to the training completed.

[0059] In accordance with a preferred feature of the present invention, the user is provided, based on the processing module’s assessment of user inputs and training schedules completed, with a personalized recommendation as to periods of rest/non-training to the user.

[0060] In accordance with another preferred feature of the present invention, the user is provided, based on the processing module’s assessment of user inputs and training schedules completed, with a personalized recommendation as to periods of rest/non-training to the user.

[0061] In accordance with one aspect of the present invention, the question generating module and processing module are remote to but in communication with user input module via a communication means. Preferably, the remote question generating module and processing module comprise a website for hosting an application relating to multi-sport training.

[0062] In accordance with one aspect of the present invention, the system comprises a hand held device with a means for the user to input answers to base questions and additional questions and means for displaying information to user, and wherein the question generating module and processing module are remote to but in communication with said hand held device via a communication means.

[0063] The means for displaying information can include a display of video, animation or graphics. The hand held device may be a mobile device selected from the group consisting of personal digital assistants (PDAs), smart phones, tablets, lap tops and hand-held computing devices.

[0064] The system and method of the present invention may be used for any multi-sport training regime. Preferably, it may be used in connection with training for one or more of triathlon training, duathlon training, aquathlon training and bikeswim training. While the term “triathlon” is used in various parts of the disclosure, it is to be understood that the system and method of the present invention is equally applicable to any multi-sport program.

[0065] The present invention further provides a computer implemented method of creating a personalized, multi-sport training plan for a user comprises which comprises:

[0066] a question generating module;

[0067] a user input module which accepts user answers to questions generated by question generating module and accepts other inputs relating to the user; and

[0068] a processing module which collects and analyzes the answers to the questions and inputs and thereafter creates a training schedule for each sport which is dynamically linked to all previous user inputs; wherein the question generating module by way of an intelligent link to all previous user answers and inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

[0069] Website Representations:

[0070] FIGS. 1-6 and 9-16 represent preferred user interfaces on a website which delivers the method of the present invention. FIG. 1 is an introductory screen. FIG. 2 shows a scheduling screen with drop down options for weekly workout availabilities. FIG. 3 represents a calendar comprising a monthly training schedule. FIG. 4 is a specific instruction screen for a triathlon workout regime, wherein the user is directed to the daily workout plan for March 31, including warm up, drills, main set and cool downs with duration and intensity sets for each. Explanatory videos are provided as an optional feature if clarification is required by the user. FIG. 5 is a representation of an event readiness gauge for each sport, based on a percentage. FIG. 6 is a workout log for March 31, to be completed by the user at the end of the day or completed training sessions.

[0071] FIG. 9 is a further representation of a home page relating to the training system of the present invention, in respect to triathlons specifically. Basic information is provided on standard race distances, how the training system works and other pertinent information. FIG. 10 represents a pre-sign up page with costs and Q&A. FIGS. 11-13 are information entering pages wherein a user provides the system with all basic inputs. FIG. 14 is similar to FIGS. 3 and 5 showing a calendar of workouts and the event readiness gauge. FIG. 15 is similar to FIG. 4, with a pop out screen setting out a triathlon workout regime, wherein the user is directed to the daily workout plan for March 31, including warm up, drills, main set and cool downs with duration and intensity sets for each. FIG. 16 is similar to FIG. 6, a workout log for March 31, to be completed by the user at the end of the day or completed training sessions.

[0072] Specific Advantages of the System/Method of the Present Invention

[0073] 1. An affordable and easy to use method for multi-sport training

[0074] 2. A training schedule that is based on the user’s available time between start date and race date.

[0075] 3. A training program that is based on the user’s ability and previous experience.

[0076] 4. An “Event Readiness Gauge” that monitors the users starting point and daily progress and displays their level of readiness for the event they are training for.

[0077] 5. A “Daily Wellness Log” that monitors the user’s training and health and responds with appropriate exercise or rest periods to avoid injury or over-training.

[0078] 6. A dynamic, personalized system that works in a “feedback loop” to update/amend a training schedule, for the simultaneous training in multiple sports, such that each “new” schedule reflects both ongoing user input and best practices in the training field.

[0079] Preferred System Functionality

[0080] 1. The invention provides, preferably, an online-based multi-sport specific training system available via the internet, or as an APP on any current mobile device such as a Smartphone (for example, iPhone® or Android® type product), tablet, mobile or hand-held computer, laptop computer. It is to be understood that this system is fully adaptable to future interactive media and devices.

[0081] 2. The present invention provides users with an interactive and dynamic online training system that optimizes the individual’s specific training plan based on his/her current level of fitness, his/her event dates, event goals, and progress through the prescribed workouts.

[0082] Preferably, new users are triggered to answer a series of questions (in a current preferred format, for triathlon training, this is accomplished via base questions) that identify the users available time before race day, current level of fitness, previous multi-sport (ex: triathlon) experience, and specific distance goals. Based on this initial feedback, the processing module calculates the user’s training calendar (based on available time before the event or “race” day). The
level of training difficulty of the training schedule output from the system is based on calculations from his/her answers to the base questions.

[0083] With the information, the processing module produces a training calendar (also referred to herein also as a “schedule”) for the user. The calendar consists of specific workout routines for each sport, for each day. Each set of workout routines consists of specific workout instructions with related videos illustrating how the workouts are to be conducted.

[0084] The entire system and process of the present invention (including the processing module) is completely dynamic. Preferably, one week of specific workout instructions are provided to the user at a time. Once the user completes each workout, the user logs the results of their workout into a daily workout log or the calendar via the method described herein. The user answers a series of questions, (preferably at least three specific questions) that relate to his/her progress and wellness within the multi-sport training regime. The processing module then analyzes the responses to these questions and determines the user’s (a) ability to complete the prescribed workout, (b) level of user’s perceived difficulty when performing the workout(s), (c) the user’s health. Based on this calculation the processing module via one or more calculations of EMA of said answers, the system then intelligently prescribes the user’s next workout (for example, the next week’s workout schedule). In this way, the system is completely dynamic, offering each user the ability to progress through the multi-sport training in a way that adapts completely to his/her ability and health. The program will rest days when the user is unwell, monitor his/her wellness, and re-integrate the user once they are ready to begin training again. The program will advance users through the program at a rate that reflects how closely they follow the prescribed routine in a healthy fashion. The program ensures a user completes all necessary “phases” of training before his/her race day.

[0085] Each user has the option to select a specific multi-sport race distance they wish to train for. Once this is selected the dynamic program monitors the users progress through the training program. The training program provides the user with a dynamic “Event Readiness Gauge” that visually illustrates for the user their readiness to compete in the event distance they have chosen.

[0086] Multi-sport training is complex and each user will respond to training differently. The intent and benefit of the system and method provided herein is that they provide each user with a dynamic training regime that prescribes each user with specific workout instructions based on their progress, health, and specific goals in respect to each sport in not only a feedback loop but an intelligently delivered feedback loop. The system is built to use responses to particular user answers, and statistics applied to these answers, to “think” and to respond specifically to a user’s training needs based, in part, on a collection of acquired best practises which are built into the system. On this point, it is to be understood that the generation of questions, from question generating module, is based, at least in part, on the use of accumulated best practises within that multi-sport field.

[0087] The present invention can be implemented in numerous ways, including as a process, an apparatus, a system, a computer readable medium such as a computer readable storage medium or a computer network wherein program instructions are sent over optical or communication links. In this specification, these implementations, or any other form that the invention may take, may be referred to as systems or techniques. A component such as a processor or a memory described as being configured to perform a task includes both a general component that is temporarily configured to perform the task at a given time or a specific component that is manufactured to perform the task. In general, the order of the steps of disclosed processes may be altered within the scope of the invention.

[0088] The following discussion provides a brief and general description of a suitable computing environment in which various embodiments of the system may be implemented. Although not required, embodiments will be described in the general context of computer-executable instructions, such as program applications, modules, objects or macros being executed by a computer. Those skilled in the relevant art will appreciate that the invention can be practiced with other computer configurations, including hand-held devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, personal computers (“PCs”), network PCs, mini-computers, mainframe computers, and the like. The embodiments can be practiced in distributed computing environments where tasks or modules are performed by remote processing devices, which are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

[0089] A computer system may be used as a server including one or more processing units, system memories, and system buses that couple various system components including system memory to a processing unit. Computers will at times be referred to in the singular herein, but this is not intended to limit the application to a single computing system since in typical embodiments, there will be more than one computing system or other device involved. Other computer systems may be employed, such as conventional and personal computers, where the size or scale of the system allows. The processing unit may be any logic processing unit, such as one or more central processing units (“CPUs”), digital signal processors (“DSPs”), application-specific integrated circuits (“ASICs”), etc. Unless described otherwise, the construction and operation of the various components are of conventional design. As a result, such components need not be described in further detail herein, as they will be understood by those skilled in the relevant art.

[0090] A computer system includes a bus, and can employ any known bus structures or architectures, including a memory bus with memory controller, a peripheral bus, and a local bus. The computer system memory may include read-only memory (“ROM”) and random access memory (“RAM”). A basic input/output system (“BIOS”), which can form part of the ROM, contains basic routines that help transfer information between elements within the computing system, such as during startup.

[0091] The computer system also includes non-volatile memory. The non-volatile memory may take a variety of forms, for example a hard disk drive for reading from and writing to a hard disk, and an optical disk drive and a magnetic disk drive for reading from and writing to removable optical disks and magnetic disks, respectively. The optical disk can be a CD-ROM, while the magnetic disk can be a magnetic floppy disk or diskette. The hard disk drive, optical disk drive and magnetic disk drive communicate with the processing unit via the system bus. The hard disk drive, optical disk drive
and magnetic disk drive may include appropriate interfaces or controllers coupled between such drives and the system bus, as is known by those skilled in the relevant art. The drives, and their associated computer-readable media, provide non-volatile storage of computer-readable instructions, data structures, program modules and other data for the computing system. Although a computing system may employ hard disks, optical disks and/or magnetic disks, those skilled in the relevant art will appreciate that other types of non-volatile computer-readable media that can store data accessible by a computer system may be employed, such as magnetic cassettes, flash memory cards, digital video disks ("DVD"), Bernoulli cartridges, RAMs, ROMs, smart cards, etc. . . .

[0092] Various program modules or application programs and/or data can be stored in the computer memory. For example, the system memory may store an operating system, end user application interfaces, server applications, and one or more application program interfaces ("APIs").

[0093] The computer system memory also includes one or more networking applications, for example a Web server application and/or Web client or browser application for permitting the computer to exchange data with sources via the Internet, corporate Intranets, or other networks as described below, as well as with other server applications on server computers such as those further discussed below. The networking application in the preferred embodiment is markup language based, such as hypertext markup language ("HTML"), extensible markup language ("XML") or wireless markup language ("WML"), and operates with markup languages that use syntactically delimited characters added to the data of a document to represent the structure of the document. A number of Web server applications and Web client or browser applications are commercially available, such those available from Mozilla and Microsoft.

[0094] The operating system and various applications/modules and/or data can be stored on the hard disk of the hard disk drive, the optical disk of the optical disk drive and/or the magnetic disk of the magnetic disk drive.

[0095] A computer system can operate in a networked environment using logical connections to one or more client computers and/or one or more database systems, such as one or more remote computers or networks. A computer may be logically connected to one or more client computers and/or database systems under any known method of permitting computers to communicate, for example through a network such as a local area network ("LAN") and/or a wide area network ("WAN") including, for example, the Internet. Such networking environments are well known including wired and wireless enterprise-wide computer networks, intranets, extranets, and the Internet. Other embodiments include other types of communication networks such as telecommunications networks, cellular networks, paging networks, and other mobile networks. The information sent or received via the communications channel may, or may not be encrypted. When used in a LAN networking environment, a computer is connected to the LAN through an adapter or network interface card (communicatively linked to the system bus). When used in a WAN networking environment, a computer may include an interface and modem or other device, such as a network interface card, for establishing communications over the WAN/Internet.

[0096] In a networked environment, program modules, application programs, or data, or portions thereof, can be stored in a computer for provision to the networked compute
ers. In one embodiment, the computer is communicatively linked through a network with TCP/IP middle layer network protocols; however, other similar network protocol layers are used in other embodiments, such as user datagram protocol ("UDP"). Those skilled in the relevant art will readily recognize that these network connections are only some examples of establishing communications links between computers, and other links may be used, including wireless links.

[0097] While in most instances a computer will operate automatically, where an end user application interface is provided, a user can enter commands and information into the computer through a user application interface including input devices, such as a keyboard, and a pointing device, such as a mouse. Other input devices can include a microphone, joystick, scanner, etc. These and other input devices are connected to the processing unit through the user application interface, such as a serial port interface that couples to the system bus, although other interfaces, such as a parallel port, a game port, or a wireless interface, or a universal serial bus ("USB") can be used. A monitor or other display device is coupled to the bus via a video interface, such as a video adapter (not shown). The computer can include other output devices, such as speakers, printers, etc.

[0098] The website of the invention is a collection of web pages, hosted on one or more servers. Users typically connect to website on the Internet using hyperlinks, also referred to as links. By clicking on a link, a user directs a browser operating on computer system to open a window on the monitor of the computer system showing the website associated with the link.

[0099] Preferably, users will register with website to access the dynamic interactive training features. Such a registration system may include obtaining information about the user such as their name, email address, geographic information, such as address, or country of residence, and the like. Once registered, users can log on to website using a user name and password, which are provided by server or selected by the user on registration. The user will also be provided a personal web page at the website at which they can view their content and schedules.

[0100] Server has a database which stores the website, the content thereon, and associated web pages, records about each user and the content, and information about each link.

[0101] When a user visits the home page, they may have to log in, if they are a registered user. If they are not a registered user, they may be unable to access certain features of the website, but the server records the IP address of the unregistered user, and offers the unregistered user an opportunity to register.

[0102] When a user registers, they obtain an account; and provide, to the system, their first name, last name, geographic location (by city or town) and birthday. The system may also request information about the device being used to access the website, for example the type of computer, the manufacturer of the computer, the browser being used, etc. The user then selects a password and username for accessing the website.

[0103] As will be apparent to those skilled in the art, the various embodiments described above can be combined to provide further embodiments. Aspects of the present systems, methods and components can be modified, if necessary, to employ systems, methods, components and concepts to provide yet further embodiments of the invention. For example, the various methods described above may omit some acts,
include other acts, and/or execute acts in a different order than set out in the illustrated embodiments.

[0104] The present methods, systems and articles also may be implemented as a computer program product that comprises a computer program mechanism embedded in a computer readable storage medium. For instance, the computer program product could contain program modules. These program modules may be stored on CD-ROM, DVD, magnetic disk storage product, flash media or any other computer readable data or program storage product. The software modules in the computer program product may also be distributed electronically, via the Internet or otherwise, by transmission of a data signal (in which the software modules are embedded) such as embodied in a carrier wave.

[0105] For instance, the foregoing detailed description has set forth various embodiments of the devices and/or processes via the use of examples. Insofar as such examples contain one or more functions and/or operations, it will be understood by those skilled in the art that each function and/or operation within such examples can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, or virtually any combination thereof. In one embodiment, the present subject matter may be implemented via ASICs. However, those skilled in the art will recognize that the embodiments disclosed herein, in whole or in part, can be equivalently implemented in standard integrated circuits, as one or more computer programs running on one or more computers (e.g., as one or more programs running on one or more computer systems), as one or more programs running on one or more controllers (e.g., microcontrollers) as one or more programs running on one or more processors (e.g., microprocessors), as firmware, or as virtually any combination thereof, and that designing the circuitry and/or writing the code for the software and/or firmware would be well within the skill of one of ordinary skill in the art in light of this disclosure.

[0106] In addition, those skilled in the art will appreciate that the mechanisms taught herein are capable of being distributed as a program product in a variety of forms, and that an illustrative embodiment applies equally regardless of the particular type of signal bearing media used to actually carry out the distribution. Examples of signal bearing media include, but are not limited to, the following: recordable type media such as floppy disks, hard disk drives, CD ROMs, digital tape, flash drives and computer memory; and transmission type media such as digital and analog communication links using TDM or IP based communication links (e.g., packet links).

[0107] Further, in the methods taught herein, the various acts may be performed in a different order than that illustrated and described. Additionally, the methods can omit some acts, and/or employ additional acts.

[0108] These and other changes can be made to the present systems, methods and articles in light of the above description. In general, in the following claims, the terms used should not be construed to limit the invention to the specific embodiments disclosed in the specification and the claims, but should be construed to include all possible embodiments along with the full scope of equivalents to which such claims are entitled. Accordingly, the invention is not limited by the disclosure, but instead its scope is to be determined entirely by the following claims.

EXAMPLE

Example 1

[0109] The following is a description of how a typical triathlete “user” will employ the system and method to optimize training, with reference to the phases of training described in FIG. 8.

[0110] The user subscribes to the service online with his computer agreeing to pay a monthly fee for the module “triathlon training service”.

[0111] At a first user input phase 10, the user answers the following six questions, the answers of which identify the criteria for enabling the system engine to calculate the user’s initial training plan.

[0112] How would you describe your level of ability in triathlon? (Novice, Intermediate or Advanced).

[0113] Select the date you would like to start the plan.

[0114] Select the date of your goal race.

[0115] Select the distance of your goal race.

[0116] How many secondary races would you like to compete in?

[0117] Select the dates for your secondary races.

[0118] Based on the answers to these questions, the processing module calculates at 12 a training plan for the unique user, based on the time available for training (weeks between start date and goal race date), the distance of the goal race, and his level of experience. The plan is displayed in a calendar starting at week one (14). When the user selects the day of the training in the calendar the workout prescription and video explanation is provided for the user explaining how to perform his workout for that day.

[0119] Once the user completes (or does not complete) the workout for that day, he is prompted to answer five questions about how well he did at the activity and how he was feeling that day and at a user interface, enters a “daily log” at 16. The daily questions may comprise the following:

[0120] Did you complete today’s workout? (answer is a sliding scale between 0-100%)

[0121] Rate today’s training. (answer is a sliding scale between 0-100%) Rate you mood today.

[0122] Rate the quality of last nights sleep.

[0123] Rate your general state of health today.

[0124] Based on the EMA of the answers to these questions, the training processing module at 18 prescribes the next workout(s). The results of the answers to these questions could mean that the user repeats the current week’s workouts, progresses to the next series of workouts 20, 22, (pre-race workout 23) is scheduled a recovery series of workouts, or is scheduled a rest day or days. The basis upon which the processing module “recommends” the next workouts is a combination of comparison to a compiled database of best practises and the EMA of the answers to the previously posed questions.

[0125] As the user completes his workouts the training engine calculates the EMA of his “readiness” to participate in the event and displays it for the user in an Event Readiness Gauge 26 on the user interface of the mobile device or other computing device. This helps the user visually and preferably graphically see how ready he is to participate in the event (Race Day 28). Upon completion of event at Race Day 28, user is further prompted at 30 to enter information regarding either next event or
off-season training. Based on the EMA of the answers to these questions, the training processing module at 32 prescribes the next workout(s) 34 or rests.

We claim:
1. A system for creating a personalized, dynamic, multi-sport training plan for a user which comprises:
   a) a question generating module;
   b) a user input module which accepts user answers to questions generated by the question generating module and accepts other inputs relating to the user; and
   c) a processing module which collects and analyzes the answers to the questions and inputs and thereafter, based at least in part on a calculation of an exponential moving average ("EMA") of said answers, creates a training schedule for each sport, which is dynamically linked to all previous user inputs;

2. The system of claim 1 wherein the question generating module, by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

3. The system of claim 1 wherein the user, after having completed all or part of the first training schedule is prompted by the question generating module to respond, via the user input module, to one or more additional questions, the answers to which are provided to the processing module to generate, based at least in part on a calculation of an EMA of said answers, a subsequent training schedule which is customized to the user and which is fully and dynamically responsive to the inputs received.

4. The system of claim 1 wherein the user, after having completed all or part of the first training schedule is prompted by the question generating module to respond, via the user input module, to one or more additional questions, the answers to which are provided to the processing module to generate, based at least in part on a calculation of an EMA of answers to questions relating to each sport individually and collectively, a subsequent training schedule which is customized to the user and which is fully and dynamically responsive to the inputs received.

5. The system of claim 1 wherein the processing module, in devising subsequent training schedules, factors one or more the following: the inter-relation between the sports, the optimal training requirements of each sport, the age of the user, the physical condition of the user, the mental condition of the user, the goals of the user, the training time available to the user, the time proximity of the desired event and the event distances.

6. The system of claim 2 wherein the base questions include those relating to user's available training time, desired workout lengths, the current fitness level, experience in each sport, alone or combined, distance goals, and target event dates.

7. The system of claim 5 wherein the additional questions comprise questions relating to the training completed under a previous training schedule.

8. The system of claim 1 which additionally provides to the user, based on the processing module's assessment of user inputs and training schedules completed, a personalized assessment of readiness for an event.

9. The system of claim 1 which additionally provides to the user, based on the processing module's assessment of user inputs and training schedules completed, a personalized assessment of readiness for each individual sport in a multi-sport event.

10. The system of claim 1 which additionally provides to the user, based on the processing module's assessment of user inputs and training schedules completed, a recommendation to trigger a period of rest/non-training to the user.

11. The system of claim 1 wherein the question generating module and processing module are remote to but in communication with user input module via a communication means.

12. The system of claim 11 wherein the remote question generating module and processing module comprise a website for hosting an application relating to multi-sport training.

13. The system of claim 1 comprising a hand held device with a means for the user to input answers to base questions and additional questions and means for displaying information to user, wherein the question generating module and processing module are remote to but in communication with said hand held device via a communication means.

14. The system of claim 13 wherein the means for displaying information can include a display of video, animation or graphics.

15. The system of claim 13 where in the hand held device is a mobile device selected from the group consisting of personal digital assistants (PDAs), smart phones, lap tops and hand-held computers.

16. The system of claim 1 for use in triathlon training.

17. The system of claim 1 for use in duathlon training.

18. A computer implemented method of creating a personalized, multi-sport training plan for a user comprises which comprises:
   a) a question generating module;
   b) a user input module which accepts user answers to questions generated by question generating module and accepts other inputs relating to the user;
   c) a processing module which collects and analyzes the answers to the questions and inputs and thereafter, based at least in part on a calculation of an exponential moving average ("EMA") of said answers, creates a training schedule for each sport which is dynamically linked to all previous user inputs; wherein the question generating module by way of an intelligent link to all previous user inputs and feedback direction from the processing module, creates a plurality of further questions for the user to enable modifications to be made to training schedule for each sport.

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