NEW TECHNOLOGY AND ITS APPLICATION IN RECREATIONAL SPORT MANAGEMENT

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We are living in an age of information explosion that is changing at an unprecedented rate. The past decades have been laden with substantial economic, political and social developments that have substantially affected society. This explosion of information, brought about by the continuing revolution and tremendous advances in technology, is changing the way we function personally, socially and professionally (Mainville & Valerius, 1999). Technology is also transforming the way we partake in our recreation and sport activities. Specifically, within our recreation and sport organizations and agencies, we are seeing changes in the kinds of services and products we provide to our participants, expectations of employee performance by both management and participants and even the shape of the organization itself. Technology is playing a pivotal and exciting role in how we deliver leisure services that meet the needs and interests of our participants. It provides powerful new ways to visualize, understand, create, manage, and evaluate our programs. Not since the industrial revolution has a technology had the impact on society as great as the advent of the computer (Schroth, 1983).

Some important and substantial changes have occurred during this past decade in the use of information technology in recreation and sports programs. The personal computer, which is considered the universal machine and center of information technology, has reconfigured and transformed today's leisure service provider as perhaps no other invention since electricity. “In the provision and management of recreation services the computer is revolutionizing how we do business” (Confer, 1996, p. 82). And with the improvement of networking, the productivity and efficiency of the personal computer has been greatly enhanced. In many recreation and sport agencies, the use of personal computers has become standard for word processing, electronic spreadsheets, database management, multi-media, GIS, desktop publishing and other business applications. To this list can be added specific applications such as tournament sport scheduling, facility scheduling, recreation registration, fitness and wellness applications. With the technological innovations creating even faster, smaller, more reliable, more powerful and less expensive computers, computer power is widely accessible to most recreation and sport agencies and staffs. Many functions that were once restricted to large mainframe administrative computers the size of an office room can now be completed by each employee at his or her own personal desktop or laptop computer. Information technologies such as digital cameras, improved scanners, optical character recognition (OCR), interactive voice response (IVR), information kiosks, World Wide Web, touch screens, digitizing tablets, plotters, electronic pen-based notepads, and voice and handwriting recognition are becoming commonplace in today's recreation and sport agency.

As we make the turn into the 21st century, predictions regarding the future take on more importance and meaning in our life. Ranging through all aspects of our life, futurist ideas predict the ongoing encroachment of computers and technology into the work and leisure aspects of life. For example, home based offices and tele-commuting will become prevalent to the point that it is estimated 50 million Americans will be working from home (at least part-time) by the year 2,000 (Himowitz, 1997). Predictions suggest recreation and sport activities will become much more entertainment driven mixing the technology of virtual reality and high risk adventure to create simulated experiences such as sky-diving in a controlled facility with an 100 mile an hour updraft. To place computers in perspective for non-computer users, IBM predicts that hard disc drives in PC's will outsell television sets in the year 2,000 (Adler, 1997). In the last ten years, computing technology has had a significant impact on business and government communities, including recreation and sport, in the delivery of effective and competitive services (Courtney, 1993). Gates (1995) projects even greater technological impacts on the future of our society, including an electronic wallet for cash transactions, “super technologically” based homes, electronic books, shopping for services and goods via the Internet, increases in telecommuting to work and a thoroughly decentralized, information based society. His predications, along with trends in the recreation field, are evidence that the increased use in technology along with technological improvements and change are a fact of life in the 90's, the new millennium and beyond. This rapid pace of change and dependence on the use of computers by society demands that recreation and sports providers keep pace.

HISTORY
Recreation and sport agencies began embracing computer technology and other high tech equipment in the administration of their program and services in the early 1980s with the introduction of the personal computer. Prior to that time only a few agencies used the mainframe computer for limited recreation and sport functions.

Use of computers in recreation and sport agencies has steadily grown since the early 1980's. Stand-alone software applications for specific tasks such as sports scheduling, facility scheduling and recreation registration were being used in the mid-1980s by some recreation agencies but only as a secondary use to generic applications. A few recreation agencies were found to have custom designed and developed their own applications using a data base program, but most of them purchased commercially prepared or "canned" software from various vendors.

Recreation and sport specific software was initiated in the late 1980s when a few vendors began offering software programs which could schedule sports leagues more effectively when dealing with the substantial numbers of participants found in some sport leagues. Many practitioners believed that sport scheduling software would be a high priority for vendors and a heavily used software application in the field. However, “because of the relatively small size of the leisure services market (as compared with the general business software market), plus the fragmentation of needs that exists within leisure services, the large software companies have not been attracted to the market” (Cheng, 1989, p. 30).

Although recreation and sport agencies, military recreation programs, university recreational sport programs and other recreation organizations were following societal trends by significantly increasing their investment in computer hardware and technology, the majority of users appeared to be underutilizing this technology even in the early 1990s. A 1994 study by Reswick found that the use of computers in the recreation management field was primarily limited to word processing, accounting and desk top publishing purposes. This study appeared to find that administrative activities of most recreation and sport agencies and the facilities managed by these organizations had not necessarily profited from technology improvements.

This apparent lack of demand for more recreation and sport programming type of software programs resulted in a select group of software companies being attracted to this specialized field. Major software companies were hesitant in developing applications specifically for the recreation and sport market due to the limited market size and complexity of features needing to be addressed in such software products. As a result, the available software for recreation and sport is relatively small in number.

However, within the past five years, there has been a significant increase in the number of recreation and sport specific software applications being developed. This is due primarily to the increased awareness and understanding by practitioners of the tremendous benefits a computerized application can offer.

**COMPUTER APPLICATIONS IN RECREATION AND SPORT**

Recreation and sport software applications are different from general application software packages in that they are special purpose software designed specifically to address recreation and sport program needs. The most popular software for recreation and sport include:

1. **Sport Scheduling Software:** Computerized sport scheduling programs can save many hours of routine and tedious work associated with scheduling round robin and elimination sport tournaments. Sport scheduling software can assist in league formation, preventing scheduling overlaps and conflicts, generating detailed reports for game schedules, facility schedules, game scoresheets, team rosters, and league standings to name just a few.

2. **Facility Scheduling Software:** Facility scheduling software can help recreation and sport agencies streamline what was once a cumbersome manual process. The goal of a facility scheduling package is to provide all staff with instant access to accurate facility site availability information. A facility scheduling package would include permit registration for events and facilities, single or multiple date reservations, on-screen view of available time slots, instant access for pre-registration information and management reports to assist with preparations for scheduled events and facility usage.

3. **Registration Software:** Computerized registration software programs are being developed to assist with program registration for scheduled events and activities. The software enables recreation and sport
coordinators the ability to disseminate information more effective and efficiently to participants, instructors, facility managers, registration clerks and other office staff members. Most commercial application packages are being fully integrated with other recreation modules and offer complete menu driven and easy to use interfaces programs that are adaptable to a wide variety of recreation and sport agencies.

**Fitness and Wellness Software:** Due to the tremendous increase in the number and popularity of fitness activity programs, many fitness software programs are being developed to assist the fitness practitioner with the management of these programs. Among the most popular fitness software packages for recreation and sport agencies are fitness assessment profiles, health risk assessment, personal fitness programs, and weight management programs.

**Internet and the World Wide Web:** The explosion of the Internet and the world wide web in the past few years are providing many applications for its use in the recreation and sport field from enhancing communication with participants to reserving sport facilities to registering entries into a tournament.

**SPORTS SCHEDULING SOFTWARE**

One of the greatest needs expressed by recreation and sport professionals is sports scheduling software. Scheduling of leagues and tournaments has always been a repetitive, detail oriented and staff intensive task which requires significant amounts of staff resources by a recreation and sport agency. “The greatest potential for computers in intramurals (sports) is probably for scheduling and computing standings in large programs” (Horine, 1995, p. 245).

When considering the purchase and use of a sport scheduling software program, there are a number of key features that should be considered. However, what is best for each particular agency will depend to a large degree on the number of teams entering, the league/tournament formats chosen, existing computer hardware, and budget limitations of the agency. The following are some of the suggested features that should be considered before purchasing any scheduling software:

**Team Capacity.** Depending on the tournament needs, the program should accommodate the upper limits in terms of teams, leagues, divisions, and the number of different facility sites in use.

**League Formation.** It is very important that the staff have the capability of deciding whether the selection of teams and the creation of both leagues and divisions will be established through an automatic random selection by the computer, or by a set of staff-defined criteria.

**Scheduling Conflicts.** The program should check for scheduling overlaps as well as for re-scheduling of game dates for any reason including team conflicts, weather cancellations and other programming concerns.

**Scheduling Formats.** The program should be able to schedule for round robin, double round robin, single elimination, double elimination, consolation, meets and the various challenge tournament formats. With each of these formats, the ability to seed teams and assign handicap scores are important.

**Master Schedule.** A valuable feature of a computerized system is that it allows for the creation of master schedule reports that can be viewed on-screen or on a printed report for the entire tournament schedule in advance for a particular date, facility, league or team. Being able to view these reports lends great flexibility to the staff for rescheduling games, preparing sport facilities and the monitoring of the number and the skill level of game officials, supervisors and other employees.

**Team Schedules.** In addition to developing a master schedule, most all programs will provide team scheduling. However, items to look for in team scheduling include on-screen viewing as well as hardcopy or disk files creation, editing capability, and home vs. visitor assignments. A number of programs will inadvertently assign the “home team” classification to the same team for every game in the tournament.

**Reports.** The design and actual print-outs of reports and team schedules should be flexible enough and resemble those that were being used when the scheduling process was done manually. Because a computerized system can create detailed reports that are specific to the sports program, it is probably the most important component of the scheduling program. Game times, because of participant confusion, should be able to be printed in both standard am/pm format and military time, dates should include the day of the week, and
facility sites should be represented by the name of the facility rather than a code. Printing of individual game scoresheets, including eligible players, is also very beneficial. Facility schedules/reports by specific sites, by court/field and be either a range of dates, times, divisions or leagues can all be useful when managing sport tournaments.

**Team Rosters.** The program should provide a means of generating and maintaining team listings and rosters by sport, division and leagues as well as an alphabetical phone list with addresses of team captains for mail-merging of form letters.

**Standings.** The capability to generate league standings with won-loss records and "games behind" calculations are important to some league administrators.

**Optical Scanning.** For large tournaments, being able to scan team entry form information can save numerous hours of data entry. It also eliminates the many data entry errors that frequently occur when manually entering a large number of entries.

**Sportsmanship Ratings.** If your sports program tracks team and individual sportsmanship ratings throughout the season and/or year, then this feature in the software program might be of interest to you. A few applications will track individual, team and player's ratings and will automatically exclude their names from a printed game scoresheet if the rating exceeds a specified level.

An effective computerized sport scheduling system can save many hours of routine and tedious work as well as help in eliminating the human mistakes that are inevitable with sport scheduling. It has enabled many agencies to do more complete and accurate scheduling in much less time than previously spent with manual systems.

**Sample Sport Scheduling Software Vendors**

- **Tournament Wizard** - Overtime Software (http://www.overtime.w1.com/twiz.htm)
- **Tournament Builder** - Active Arts (http://www.tournamentbuilder.com)
- **Sport System** - zORG (http://www.zline.com/software.htm)
- **Team Sports Scheduling System** - TC Software (http://galactix.com)
- **OfficeWare for Softball** - Blue Ribbon Software (http://www.blueribbonsoftware.com)
- **Schedule Wizard** - Timeless Technologies (http://www.timelesstech.com)
- **RQ's Leagues** - Quartermain Software (http://ourworld.compuserve.com/homepages/rl)
- **Home or Away** - CFB Software (http://www.cfbsoftware.com.au)
- **Regi-STAR** - DB North (http://www.cyberus.ca/~dbnorth)
- **Little League Organizer** - Logical Solutions (http://www.logical-solutions.com/loll.html)
- **Tennis Information System** - Tennis Technologies (http://www.tennisinformation.com)
- **All-Pro League Scheduler** - All-Pro Software (http://www.alprosoftware.com)
- **Diamond Scheduler** - Cactusware (http://www.cactusware.com)
- **GamePlan Software** - Greencourt Software (http://www.greencourtsoftware.com)
- **Tournament Tracking System** - Crystal Sport (http://www.crystalsport.com)
- **Scorekeeper** - Softstats (http://www.scorekeeper.com/league)
- **Tournament Time** - All-American SportsWare (http://www.sgco.com/llb/aaswtt.htm)
- **Athletic Director** - Edusoft (http://www.edusoftware.com/AD.htm)
- **AEK Scheduler** - AE Klawitter (http://www.aekcomputers.com)
- **Elite** - EZee Score Promotions (http://www.ezee-score.com)
- **Organized Sports** - Pennine Computer Consulting (http://www.frontiernet.net/~orgsport)
- **RecWare** - Sierra Digital, Inc. (http://www.recware.com)
- **RecTrac** - Vermont Systems (http://www.vermont-systems.com)
- **League** - Win Sports (http://members.aol.com/Win4sports)

**FACILITY SCHEDULING**

Facility scheduling can be a major task for any recreation and sport agency. The amount of details required to schedule and manage recreation facilities can be overwhelming to many staffs. A typical recreation
and sport agency schedules and manages various activity facilities and spaces such as softball/soccer/football fields, swimming pools and aquatic centers, basketball/ volleyball courts, tennis courts, racquetball courts, weightrooms, jogging tracks, and golf courses not to mention supporting facilities, catering kitchens, parks, picnic shelters and other facilities available for public use from 6:00 a.m. to 11:30 p.m. practically every day of the year.

Any facility scheduling system in use, if not computerized, requires manual record keeping of a multiple calendars and facility schedules. This is an easy task for a small organization but much more difficult for a larger organization. In this manual scheduling system, usually directed by one staff member to avoid confusion, attention to details and the use of many forms are a must if the system is to be successful. Customer service problems may also be created when facility users must check at multiple locations to inquire about facility availability or rental. It is quite clear that staff time spent processing facility reservation applications, preparing fee permits and reservation confirmations, creating master facility schedules and facility set-up requests, scheduling on-site supervisors, etc. is an extensive and cumbersome job in a manually scheduled facility system.

Once the decision has been made by the agency to invest in a facility scheduling software program, many factors need to be considered. These include:

**Permits and Confirmations.** Many facilities issue a permit complete with waiver and signature lines as well as fees calculated for the facility use. "Batch printing" and/or custom printing options for printing of information on a pre-printed, departmental form may be a valuable consideration.

**Overlapping Shared Facilities.** If activity spaces allow for shared use of certain aspects of the area (i.e., moveable walls, concession areas, soccer/softball shared infield areas, etc.) they must be checked for availability and scheduled simultaneously. Some software programs do not allow for this or have limitations on the number of overlapping areas that can be reserved at one time.

**Multiple Entries.** The program should allow for repeat or duplicate entries of long-standing reservations such as a six week beginners swim class. Software that allows for repeat bookings (daily, weekly, yearly or seasonal) will eliminate the need for multiple entries and save considerable amounts of staff time over a manually kept system. In addition, staff should be alerted if a conflict or "double-booking" error of the same facility has occurred and be given the choice of manually overriding the problem if warranted.

**Displays.** Facility availability and booked times should be displayed both on the monitor and on printouts. It is important that the program provide a "find" or search function which will locate all available time periods for a specific facility based on characteristics such as time of day, day of the week, size of the room/area, length of the activity, facility equipment needs, etc.

**Administrative Features.** The creation of automatic invoices and administrative reports are important features of a facility scheduling software program. The program should be able to automatically calculate facility user fees based on charges for facility space, any equipment rental, facility setup and cleanup charges, deposits, etc. as well as print rental agreements and invoices and update user payments received.

**Reports.** Reports which monitor use by type of facility, location, date of rental, occupancy rates, usage levels and revenue generated provide important information to staff. Reports of this nature help recognize and support the need for additional facilities when necessary. Daily facility reports should be available which alert staff of special events or uses which require extensive facility set-up, additional equipment to be provided or have other needs that would include the closing of adjacent facilities, requirement of outdoor field preparation or the placement of stages and chairs to name some possibilities.

**Maintenance Tracking.** This function should allow the agency’s maintenance staff to review the scheduling of periodic and regular maintenance efforts for each facility. This feature should schedule and track facility use, inform maintenance staff of set-up and special needs and ensure that regular, preventive maintenance is scheduled and completed.
Recreation or activity registration scheduling software was developed to assist with activity registration for scheduled events which are programmed by recreation and sport agencies. This software enables the staff to disseminate information more effectively and efficiently to participants, instructors, facility managers, registration clerks and other office staff members. Most software programs are fully integrated with other recreation modules (i.e., sport scheduling and facility scheduling) and offer complete menu driven and easy to use programs that are adaptable for a wide variety of recreation and sport settings. Automated recreation registration programs streamline the process of registering individuals and/or groups for all types of recreation and sport programs, classes, aquatics, trips, seminars and membership regardless of the setting.

Generally, the conflicting interests that face a recreation and sport agency using a manual registration system make this system less responsive to customer need by placing onerous requirements on customers in favor of ease of use for staff and financial audit requirements for accountability purposes. As a result, the recreation services agency using a manual registration system can experience less emphasis on customer service for registration accuracy or audit purposes, a lack of flexible registration methods that allow for telephone, bank card or mail-in registration and poor or unreliable tracking of customers for marketing in the future.

Since registration for recreation and sport services is in reality a sale of services or goods to a customer, the manual registration system appears to be inadequate in today's demanding market place. This suggests a computerized registration system be implemented for even the smallest of agencies. Recreation registration systems is projected to be a necessity in the next few years by providing faster customer service and membership information (Szillat, 1994).

Recreation registration software should include the general functions of client records, activity records, registration processing, and agency support systems.

**Client Records.** Client records are sets of data which identifies the customer and would include such items as: address, telephone, age, partner or spouse, dependents, risk management and emergency information, and demographic information at a minimum. In developing client records, it is important to identify how customers are grouped together and what unique identifying character each client or household will be assigned. Client records should be maintained in the master data base and accessible for multiple registration periods or activity sections. This significantly reduces time requirements and frustrations experienced by both the registration staff and the users.

**Activity Records.** Activity records are similar to client records in that they are also sets of data contained in the actual software program. However, these records identify the activity for which the client registers and are essential for the successful operation of the software. The activity record contains data on certain aspects of the activity required to make management of the registration process much more effective and efficient. Activity records are associated with a description, time, date and/or day offered, section, prerequisites, location, fee and other characteristics of the recreation or sport activity. It is important that activity records create accurate activity rosters. Activity roster information required include participant name and phone number at a minimum, but may include parent phone number, age, emergency information and instructions, sport equipment and uniform size, and any other additional information. The ability to transfer or import activity record information regarding the activity title, description, times, locations, instructors, fees and additional information for creating marketing brochures is essential.

**Registration Process.** The recreation registration software should allow for in-person registration as well as mail and telephone registration. The increasing use of information kiosks, touch-tone registration and the world wide web strongly suggests any software package chosen must have the capability of allowing registration for recreation activities via the mediums now and in the future (Szillat & Houley, 1996). Related
features such as required completion of waivers and liability release signatures in the registration process with notation in the client and activity records, method of payment by cash, check, credit card or debit card, and presentation of receipts to customers also need to be considered in selecting software.

**Agency Support Systems.** Records or reports which provide administrative data to the agency are part of the agency support system. Aspects to be considered in agency support systems include features such as printing of financial reports detailing the registration transactions occurring during a specified time period. In this report, the amount of revenue received in cash, checks and credit cards are listed for deposit to a bank or accounting department. Instructor payment vouchers which may use hourly rates, percentage of gross receipts or other methods as the basis for payment and reports listing refunds issued during a specific time period are other basic forms of financial reports provided by most software programs.

Implementation of a recreation registration software program may not solve all agency problems as computerized recreation registration is not a panacea for basic support, activity or management problems that may exist in the agency. However, the versatile features of this type of software can help agency staff become more knowledgeable about their product (activities) and sales (registrations).

**Sample Recreation Registration Scheduling Software Vendors**

- AEK Recreation Registration - AE Klawitter (http://www.aekcomputers.com)
- RecWare - Sierra Digital, Inc. (http://recware.com)
- Registration Wizard - Overtime Software (http://www.overtime.w1.com/rwiz.htm)
- RecTrac - Vermont Systems (http://www.vermont-systems.com)

**FITNESS/WELLNESS SOFTWARE APPLICATIONS**

The fitness/wellness industry has experienced a tremendous increase in the amount of participation in a variety of fitness activity programs offered each year. Due to this increase in popularity, many fitness software programs have been developed to assist the fitness practitioner with the management of these programs. The fitness practitioner is responsible for gathering, maintaining and interpreting large amounts of health data from various fitness tests on each participant in their program. “Regardless of general purpose of a test, the fitness professional has the responsibility of communicating the results of the test to the client” (Franks & Wood, 1997, p. 316). Technology can play a significant role in this process. Fitness/wellness software can assist in the following areas:

- Customer service and participant retention. Participants who obtain results in actual printouts and see progress are motivated to continue using the fitness facility and program.
- A fitness software application provides a personalized caloric, nutrition and exercise program to help participants meet their goals.
- Excellent way to promote the facility and program and attract new members. For example, staff may conduct a mini-test promotion one week for stress assessment. The next week may be blood pressure, the next body composition, and so on.
- Usually programs have a "Quick Test" which allows staff to perform a single fitness test and provide a one page printout of their results. This is ideal for testing large groups of people at different special events.
- Group evaluations provide excellent tools for contests and wellness programs.

**Types of Fitness/Wellness Software**

There are a variety of fitness and wellness software applications. Among the most popular for recreation and sport programs are: fitness assessment profiles, health risk assessments, personal fitness programs, and weight management programs.

**Fitness Assessment Profiles**

Among the most common fitness software are those that provide assessment tests or screening tools to measure ones progress. The most popular fitness assessment test is the PAR-Q pre-test screening questionnaire that helps to identify individuals who should obtain medical approval before proceeding with the profile. The purpose of this type of screening is to detect early signs of disease or health-related illnesses. Other tests include:
**Biometrics:** Medical history, blood pressure, heart rate, blood chemistries, girth, and body weight.

**Cardiovascular Fitness:** Treadmill, bike ergometer, 1mi walk, 12 minute run, and the step test.

**Muscular Strength:** Isometric, hand grip, push-ups, sit-ups, bench press, and leg press.

**Flexibility:** Sit and reach, trunk and shoulder rotation.

**Body Composition:** Skin folds.

**Health Risk Assessment and Testing**

This type of software program analyzes a person's health history and current lifestyle and estimates his or her risk of early death or illness. A program would not detect an illness already in progress but would analyze a person's physiology and lifestyle factors such as body fat, cholesterol, tobacco use, alcohol consumption, etc. to compute their health impact over the next 5-10 years. In addition, health risk assessment software:

- Provides a combination of education, motivation and peer support which helps an individual adopt healthy personal habits.
- Produces a wellness score with specific recommendations.
- Uses data from national institutes such as the Center for Disease Control (CDC), National Cancer Institute, American Heart Association, etc. who study various risk factors: cancer risk, heart disease, nutrition habits, blood chemistries, diabetes, etc.

**Personal Fitness Programs and Nutrition Assessment**

There are numerous computer programs that analyze diet and physical activity patterns of participants. These programs provide:

1. **Weight management**
2. **Meal planners**
3. **Basic individualized exercise prescriptions** for each user.

**Exercise Prescriptions**

Exercise prescription software provides for a brief medical history which is presented at the beginning of each plan to help identify those individuals who should have medical clearances before continuing. The software then checks the individual user's personal profile for the most recent body fat, strength, flexibility and cardiovascular data. Profile components with a score of average or less are highlighted for suggested improvement. The user then chooses areas in which they would like to improve with the plan. In addition, each user should commit to a weekly workout schedule....identifying specific days and times they will exercise. The program checks the amount and type of exercise selected to insure the final exercise plan will be safe and effective.

Several exercise prescription software programs provide aerobic and strength training plans. An aerobic program plan is usually 1-12 weeks in duration and is based on one or more aerobic training apparatus and usage guidelines from national sources (ie. ACSM, etc.).

While there are numerous fitness software applications available to the practitioner, there is no substitute for a well-trained fitness professional. However, software applications can aid the professional by providing excellent support when making decisions about a participant's fitness program.

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**Sample Fitness/Wellness Software Vendors**

**Fitness Partner Connection**  (http://primusweb.com/fitnesspartner)

A Fitness library that provides a variety of short articles about health and physical activities is available at this site. Also, provides a tremendous amount of links to health and physical activity web sites that
are very helpful for the physical education instructor. The site also provides an Activity Calorie Calculator which allows the visitor to type in weight and duration of activity and it will instantly tell you how many calories are burned off for various physical activities. Excellent resource!


The Longevity Game calculates how long you can expect to live based on life insurance industry research. Reminds students of the importance of "wellness" issues and the impact of changing behaviors to support a healthy lifestyle.

*FitLife* (http://fitlife.com)

This web site provides information pertaining to health-related issues and topics such as fitness, health promotion, wellness, lifestyles, stress management, fast foods and personal safety just to mention a few.

*The Fitness Files* (http://www.webpoint.com/fitness.htm)

This web site consists of four main areas: Fitness Fundamentals, Get Active, The Injurenet, and Fuel for Fitness. Students can learn the basic principles of fitness, how to calculate their target heart rates, which activities can help them stay active, how to stretch properly, and what foods are essential for a healthy diet.

*Health Touch* (http://www.healthtouch.com)

This site provides a resource directory and updates on health, diseases, wellness and illness issues.

*FITNESSGRAM* (http://www.cooperinst.org/5.html)

Provides information on the Cooper Institute for Aerobics Research and its Fitnessgram which is in use in over 6,000 schools in the US.

*Internet Fitness Resource* (http://www.netsweat.com)

This site provides a wealth of information on fitness, exercise and nutrition. IFR offers a comprehensive listing of fitness related sites as well as the Fitness Instructor FAQ, the Fitness Plan, guest editorials, links to fitness organizations, fitness software and more!

*Other Fitness Sites*

- *Dr. Pribut's Runners Page* (http://www.clark.net/pub/pribut/spsport.html)
- *Shape Up America!* (http://www.shapeup.org)
- *Yahoo! - Health: Fitness* (http://www.yahoo.com/Health/Fitness)

**INTERNET AND THE WORLD WIDE WEB**

The development of the Internet and the World Wide Web as an information source have led to tremendous growth in information exchange among practitioners and their participants (Ellery, 1997). The Web provides innovative ways for recreation and sport professionals to enhance the communication of program information. Interactive Web applications provide convenient ways to market programs, educate and inform current and prospective users, register participants, reserve facilities, access program schedules, and store pertinent information (Hall & Handel, 1997).

The Internet and more specifically the World Wide Web (Web), have emerged as a new communication medium. For many recreation and sports agencies, the ever increasing popularity of the Internet intimidates despite its appeal. In the recreation and sport industry, collegiate recreational sports programs have become the leaders in Web site development but others are following very quickly (Sherman, 1998). Not only does the Web offer the potential for increasingly diverse applications in the recreation and sports field, but it has afforded
many recreation and sports practitioners the opportunity to use unique applications in their agency. Some of the more advanced applications include using the Web for employees to clock in and out, providing on-line employee applications and program surveys, offering virtual tours on-line of recreation and sport facilities and chat rooms to discuss sports related issues to name just a few.

While the Internet allows communication “world-wide,” an Intranet uses Web technology that “enables individuals within an organization to share critical internal information using any Web browser on any computer platform” (Tabor, Pryor and Gutierrez, 1997, p. 7). With the advent of the Intranet, it is now possible to use the Web to distribute sensitive accounting information or other private departmental information to staff since it is password protected and not accessible to outside Web users. An Intranet can be used for purchase requisitions, budget spreadsheets, payroll, personnel records, annual reports and submitting and tracking departmental work request orders.

As is the general trend in society, there are a growing number of practitioners using the Internet and the Web. Computers, when connected to on-line services like the Web, provide staff with a powerful tool to gather, analyze and distribute program information in addition to improved marketing efforts and increased exposure. Web technology is definitely emerging as one of the most powerful tools at the recreation and sport practitioners’ command.

### Recreation and Sport Equipment Vendors

- [Flaghouse](http://www.flaghouse.com/)
- [Kodiak Industries](http://www.kodiakgym.com/)
- [Rapid-Wear](http://www.rapid-wear.com/)
- [Recreation Equipment Unlimited](http://www.insdir.com/reu/)
- [Spalding Equipment](http://www.spalding.com/)
- [Wilson Equipment](http://www.wilsonsports.com/wilson/index.html)

### MISCELLANEOUS SOFTWARE APPLICATIONS IN RECREATION AND SPORT

In addition to the software applications previously mentioned, there are a variety of miscellaneous computer applications that can be used by the recreation and sport professional. Some of the more common include:

**Interest Surveys.** Being able to advertise and communicate with participants who might be interested in a particular activity well in advance of the starting date increases the promotional campaign's effectiveness. A computerized interest survey questionnaire, completed by participants before the season begins, provides the staff with instant, up-to-date information about participants and their particular interests and can save valuable staff time and financial resources in their targeted marketing approach.

**Accident Reporting.** Because of the very nature and the risks involved with some of our recreation and sport programs, accidents are inevitable. Data gathered and analyzed for each accident that has occurred, can assist the staff in determining possible causes for the accidents and in developing measures to reduce these accidents from occurring in the future.

**Instructional Sports.** Recent advances in technology have had a significant impact on the instructional aids available in helping participants gain a better understanding of the knowledge and skills of a particular sport. Instructors now have state of the art audio-visual equipment such as video cassette recorders, interactive video systems, laser disc players, projection display panels, video screen images along with software applications that can develop performance models which can be reviewed by the instructor to correct performance, analyze mistakes and provide instant feedback.

**Equipment Inventory.** Because of the large amount of equipment items needed to support a recreation and sport program, it is important that the agency be accountable for inventory control. Computerized equipment inventory systems are fairly easy to develop using standard database management software such as Microsoft Access. Typical components of an equipment inventory software program would include databases for equipment, vendor, staff and facility locations; automatic tag numbering for identification.
purposes for each piece of equipment; and reporting capabilities for master inventory reports, inventory summary reports by items, location, vendor and purchase price and reports for lost or discarded equipment.

**Financial Analysis.** Recreation and sport programs are no different than other businesses from a financial analysis standpoint. As budgets are being scrutinized in an effort to cut costs, administrators are relying on computers to assist in determining cost analysis, income target analysis and forecasting budgetary trends. Computers are an essential budget management tool for monitoring and maintaining equipment purchases, payroll reports, account payable and account receivable entries as well as other similar financial records and receipt functions.

Other software applications often found in recreation and sport agencies include: personnel scheduling and assignments of hourly wage sports officials, lifeguards, ticket takers, activity supervisors, concession workers, etc.; developing publicity and promotional information which include flyers, brochures, newsletters, advertisements and activity calendars; project management tracking including PERT and GANTT charts; employee database information; organizational charts; needs assessments surveys; golf handicap systems; award certificates; electronic bulletin boards; and numerous word processing tasks such as sport rules and regulations, sport schedules; annual reports, entry forms and manuals to name just a few.

**TRENDS**

The use of technology in everyday recreation and sport programming and administration will have a significant affect on both users and professional staff alike. It is one that is still evolving and is more than just choosing the right hardware and software applications. It is also about predicting and preparing for the future.....in the workplace and on the ball field. Information technology is certainly remaining true to all of its hype: more service, better, faster and more efficient. Computer use has broadened tremendously in the past few years and undoubtedly will continue to do so as we enter into the new millennium.

The following are just a few of the trends illustrating the impact of technology in the recreation and sport field:

- Some support office staff personnel will become extinct due to advances in technology.
- Advanced, innovative technology will require recreation and sports staff to seek more training in technological matters.
- Technology (computer) specialists will become a common member of the professional recreation and sports staff. Administrators are realizing the value of technology and are now hiring more full-time and part-time computer support staff to develop and maintain current levels of use.
- The use of computers in recreation and sports has broadened tremendously in the past few years and will continue to do so for years to come.
- Use of technology will change the methods by which recreation and sports professionals communicate with other professionals, participants, and the general public. Electronic mail is rapidly replacing standard mail and will become the preferred media choice for recreation and sport professionals.
- Technology will become a common medium of communication. Unfortunately, in some instances, this will result in a “depersonalizing” of the delivery of programs. The more staffs are working on their computers, the less they are on-site with participants in their program and preserving those interpersonal relationships developed by connecting or interacting with participants.
- The ability to incorporate technologies as a component of the recreation and sports program will become essential to its success.
- Many services (i.e., registration, payment of fees, league standings and scores, promotions of programs, etc.) will be available on-line.
- Technology will play an increasing role in providing supervision of facilities through the use of video cameras and control centers.
• Hand-held ID readers will provide all necessary information when verifying participant status and facility/program eligibility.

• Most fitness apparatus will be linked to a central data base with the capacity for tracking exercise routines. After swiping a participant ID card, the machine will automatically be programmed for the participant's scheduled workout.

• Recreation and sport programs and activities have become a growing market for computer software vendors who have begun to develop software applications specifically for recreation and sport functions.

• Virtual reality that mixes computers and sensory mechanisms and creates interactive, simulator based computer environments and experiences for the user will continue to grow and improve at an incredible pace. Sport virtual simulators will be developed for sports like skiing, squash, golf and hiking/rock climbing. Virtual reality will also provide a unique opportunity to train sport officials and other employees with simulated game situations in the virtual world.

• Technology will have a significant impact on the job search process for both the recreation and sport agency and the applicant. Because of budgetary constraints, many agencies will conduct the job search process using new technologies such as: electronic resumes, interviews by video-conferencing, world wide web posting of candidate resumes, electronic “chat room” interviews, etc. Interviewers will also focus more on applicants who have a vision that uses technology....the more computer literate, the better for the organization.

• Interactive voice and handwriting recognition software which can understand a user’s voice patterns and can predict the next word in a sequence will provide users the capability to communicate with their computers by voice only. This technology will have a significant impact for those who have any physical or visual disability.

• Digital cameras, which store snapshots in its memory for transfer to a computer, will eliminate the need for film development or picture scanning. This will significantly increase the use of web pages with pictures of sport champions, special events or participants in any of the recreation and sport programs.

CONCLUSION

Information technology is an integral part of life and will become increasingly so in the future (Franks & Wood, 1997). Its use in support of recreation and sport services will obviously continue to increase mirroring the same impacts occurring in society at large. New information technologies have and will continue to have a tremendous and exciting impact on how we communicate, manage, analyze and display information regarding our recreation and sport programs. Where will we be in the future? What new emerging information technologies will we be using in five years? Ten years? No one really knows for sure. However, what we do know is that the productivity and effectiveness of each professional will depend to a large degree on how well each person understands and can work with new information technologies. Successful recreation and sport agencies will involve and merge the integration of information technology, recreation and sport programs, services and participants, and professional staffs. While it is not the panacea for a quality recreation and sports program, it is quite clear that information technology is an important tool that can improve the quality and speed of daily operations and can provide valuable information to assist in decision making.