ROLE OF E-TECHNOLOGY IN PHYSICAL EDUCATION AND SPORTS

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ABSTRACT

The emergence and use of technology in this century is a significant development affecting the teaching and learning of physical education and sports. Education is faced with a new dimension dominated by e-learning. For physical educators this trend is also reflected by the necessity to improve their teaching and methodology. The modern alternative is the use of technology meant to increase accessibility to information and teaching process effectiveness. This paper highlights the use of modern technology in physical education and sports. The use of technology for teaching and learning has been summarized in following aspects: The need for Technology, Technological Revolution, help of Internet, use of e-commerce, Digital divide and challenges. It is concluded that technology enormously improve teaching and learning in the field of physical education and sports.

KEYWORDS: Technological revolution, Internet, e-commerce, Digital divide.

INTRODUCTION

The knowledge and practice of physical education and sports is very essential for our healthy life. The visual lessons of physical education and sports are essentially based on connected learning environment which uses technology that is networked in structure. This article will address the topic of information technology for physical education and sports management and will attempt to provide an over view of how information technology (IT) is changing the nature of management practices in sports. The discussion of IT application in the profession can be done under following areas:

1. How the tools of today’s “technological revolution” can be applied to the administration of sports.
2. How development such as the internet and World Wide Web help in specific management functions such as training and marketing.
3. How e-commerce can make participation in sports more available through lower priced equipment and lastly.
4. The digital divide and underlying condition that keep people participating fully in the benefits in IT revolution.

**THE TECHNOLOGICAL REVOLUTION**

We are living in the midst of one of those very unusual occurrences that come along once very few generations: a society wide paradigm shift. The close of the last millennium has seen a fundamental change that is moving society the age of industry to the age of information. The currency in the new society that is being formed is information and the medium of exchange is called IT (and sometimes computer technology-CT). IT is simply the tools and method used for the identification, organization and manipulation of facts that we call data. IT has become the engine that is driving all sectors of today’s economy be it industry, government education or indeed sports. The most important piece of equipment that lies at the heart of the whole IT process is the computer. The computer and the software that it runs is an essential element in the new societal paradigm and it is a key to success for the modern sports manager. It is the piece of equipment that allows the sports administrator to maximize the return on scarce resources whether this is people, facilities and equipment or finance. In turn, it is also perhaps the single most important tool to the sports administrator to extend the reach of sports and recreational programming to as many potential participants as possible.

Just as money has been the currency and a source of power in the old paradigm, information is the currency and a source of power in the new paradigm. No where is the old saying “that knowledge is power” more true than a society where information or data is the force that drives the new economy. The secret to managing knowledge and information is in the development and maintenance of computer database. A database nothing more than an organized collection of common records that can be searched, accessed and modified. Database software is very widespread as most standard office computer software will typically have a simple database program in addition to word processing, spreadsheet and presentation applications.

There is, however, a far more powerful and useful kind of database for sports managers than the one that comes in the standard software suite. The relational database is a data management system that stores information in a series of table consisting of rows and columns of data. When the operator conduct a search, a relational database allows the individual to match data from one table with data from a second to produce a third table or a report. An illustrative example is that of an individual charged with overseeing a complex sports competition, the details of which have been entered into a relational database. The time for a schedule event can be pulled from one table, a roster that has the name of qualified referees who can officiate the event from another.
table, their availability from a third table resulting in a report that list all of the appointed time. This talk which could take hours of manual manipulation from paper records can be done in a fraction of the time from digital records. Similar event management software can assist the sports manager with a myriad of other tasks associated with the competition ranging from facility scheduling, equipment set up and knock- down, or even ordering soft drinks for the concession stand.

From the foregoing the value of using IT tools can be readily seen for the organization of a competition. These tools are even more important for the day-to-day operation of the sports organization as can be seen by the kinds of sports program information be contained within these databases. First one is athlete specific information such as team roster including biographic information with name, gender, age, contact information and even clothing sizes for team uniform. The same database may also contain details of medical conditions, performance history, or other participation characteristics of the athletes. Another common use is the development of roster of program support personnel such as officials, timekeepers, drivers or medical staff. Aside from details such as their address, a database of this type might also contain information about availability and reliability. For example, do they actually show up when they volunteer? Money is always an issue for today’s sport management professionals. Databases are particularly useful for tracking donors or potential donors and whether they contribute money in-kind services. In addition to the expected biographic information sports manager will be other key for successful fund raising such as the source of their motivation or affiliation and the frequency with which they give.

Databases are also essential for other type of administrative information. Examples include like accounting and business records, employee files, equipment inventories or facility maintenance records. The organizational marketing information system (MIS) is also typically a database program in which is tracked information such as season ticket sales, gate receipts or merchandising sales. It is particularly useful if different software applications interface with each other seamlessly which is to say, “Do the programs talk to each others?” Can, for example, the data entered in the MIS resulting from ticket sales is imported directly to the accounting program.

To be effective, database should be regularly updated to record changes. Bear in mind that the passage of time presents a more comprehensive picture of most activities and ability to record change and make sense of it is essential for long term survival. Further, there is nothing as constant as change, particularly in sports organization, and a well thought out and maintained
database is a great way to develop and maintain an “institutional memory”; a record of those changes and the impact they have on the organization.

As great as database are effective sports program management, the real power of information technology comes when individual computers are tied together through the medium of a network. This is a truly case where there are synergies created as in \(2 + 2 = 6\). A computer network simply is the hardware and software required to connect two or more machines together so to allow the sharing of data and other sources. Larger enterprises use computer networks to link together their operatives in a common computing environment. All of the permeations and configuration available to the sports administrator are clearly beyond the scope of this presentation except to note that the most common configuration of these kind of networks are of the client – server variety. This type of network has a main server that houses most of the information and database files. The individual operatives access the server through their desktop terminals or work stations which are called clients. Besides sharing data, a network can share other resources as well. For example, a network can have any number of computers sharing a very good quality printer instead of using a number of mediocre workstation printers. A powerful server can substantially increase computing speed and effectiveness throughout an organization.

The key issues to be addressed when considering the acquisition and implementation of an organizational IT system are as follows: First and foremost, once the decision is made to introduce IT systems to the organization, the table of organization and staffing patterns will need to change. The new IT system cannot simply be “layered on” to the existing structure; it must be imbedded into the organizational process. The adoption of IT strategy and associated changes in procedures usually means extensive training for the staff. The next consideration is that of hardware. What is the computer system configuration and computing capacity that the organization will need? Capacity should not be underestimated as a relational database can consume huge amount of memory. So do other strategies that enhance organizational effectiveness such as moving data files off the hard drives of individual work stations and onto a file server on a computer network?

Another crucial decision revolves around operating software. Standard vendor prepared software package are usually developed on the basis of lowest common denominator for a group of potential clients. It is not uncommon that only about 80% of an organization’s needs are met by an off-the-shelf product. So the sports administrator is left with the choice of writing their own software programs for adapting organizational operating procedures to some degree around the software package. The former can be hugely time consuming, very expensive and the end result
is not always assured. Generally, the more extensive modification required for a software product, the more expensive the product becomes and the more difficult it will be to accommodate software upgrades from the vendor.

**THE INTERNET**

It is important to note that computer networks need not be limited to a single site or facility. Wide area networks (WANs) can link together sports administrators located throughout the country. For example, all the regional offices of a national sports governing body such as the national football association can be linked together regardless of their geographic location. All of the operatives so linked can share administrative and programming information and communicate with each other cheaply and efficiently through the medium of e-mail.

The computer network with which the public is most familiar is the internet and the World Wide Web, known simply as “the Web”, is what most people think of when we say “the internet”. While the internet has been around for decades going all the way back to ARPAnet in the 1960s, the web is a comparatively new innovation first introduced in the mid 1990s. It is a digital medium which present information in text, audio and graphics in a simple hyper-text computer language readable by a browser. This medium has simply exploded and today there are more than 15 million web addresses called Uniform Resource Locators (URLs), many with hundreds of individual pages on their sites. Thousands of applications for new URLs are received every week.

The ways that the web has changed society are almost too numerous to mention. Suffice to say it has become an extremely important medium of communication, education and commerce and its importance in these areas will only continue to grow in the future. In terms of communication, for example, USA Today which is the closest thing a national newspaper in America gets more than three million visits per day. Some 60% of these visits are to its sports pages. In terms of education, the concept of “distributed learning” or “distance education” gains more adherents with every passing day. Through the U.S. sports Academy, for example, one can do the entire course of study for an accredited Master of Sports Science degree through the web without leaving their home. The same possibilities exist at the undergraduate level through the International Sports Academy.

At this juncture the most significant is marketing and commerce applications of the web. There are virtually no professional sports team in the united states that do not have a website and most are linked together through networks of Websites coordinated through the various league
offices. Just how tight these linkages are is driven in part by agreements between the league teams on activities such as revenue sharing for media broadcasting rights and merchandise sales. The web is currently used by professional sports team in ways that the developers of the technology never envisioned. For example, there are no English language radio broadcasts in Montreal for the Montreal exposé professional baseball team. Fans wanting hear the play-by-play in English can only do so by calling up the team’s Website and listen to it coming across as an audio feed. Another example of how deeply the internet has penetrated professional sports is how some pro hockey teams now require their players to have e-mail addresses as a means to interact with both the team administration and their fans.

These examples lie at the heart how the internet will affects sports in the future: through the changing of the way that the sports fan will be consume the sports products. Where in the infancy sports marketing did not extend much beyond putting out a sign on the sidewalk saying “Game today”, now sports team have well developed and extensive websites to more effectively market to their customers. The trend in this regard is also clear. What will emerge is networks of teams and users bound together by a common interest and driven a part by advances in information technology.

These developments are not limited to the upper end of the sports hierarchy. Compared to the extremely high cost of traditional television broadcast, the comparatively low cost of “webcasting” will bring to sports fans events that could never before be seen on traditional broadcast media. A simple example of how this can occur is an annual sailboat race from mobile to Tampico across the Gulf of Mexico. In summer the skipper of a local boat participating in the event took photos every four hours with a digital camera of the race activities and uplinked them by a satellite phone to his own website. Thus his friends in the community, or anyone else in the world, who stumbled onto the website, could participate in this event as they never could before.

Sports events of a distinctly local flavor without the mass appeal that make them economical for television broadcast can so be distributed through the web to anyone with an interest. The web is not constrained by the limited availability of broadcast channels and high production costs. And while bandwidth is currently an issue for the web, this will resolve itself in the near future with the introduction of broadband technologies.

**E-COMMERCE**

It is appropriate to briefly examine how the web will change sale and distribution of sporting goods which is central to running sports programs. The relative cost of sports equipments can be an issue for the profession, particularly in terms of trying to broaden the appeal of sports to the
greatest number of participants. E-commerce through the internet holds the potential for containing costs for sports equipment as illustrated by the following example:

In the traditional model of manufacture and distributing through a sporting goods store, it is not uncommon for a tennis racquet which cost $40 to manufacture to be marked up as much as 300 to 400% to as much as $160 as it moves through various wholesalers and retailers in the distribution chain to a tennis player. With an e-commerce arrangement whereby the manufacturer can reach the player directly without going the middle men in a distribution chain, the greater the benefit derived to the end user from using e-commerce distribution.

E-commerce is well on its way to becoming a force in the world economy as it serves to remove barriers both natural artificial. The barriers that will vanish include those of time and space as well as national borders both physical and ideological. That this will occur is underscored by the fact that this year e-commerce will employ more than 2 million people and create a turnover in excess of $500 billion. By next year, the turnover is expected to pass $1 trillion.

**THE DIGITAL DIVIDE**

At the end I would be remiss if I didn’t call attention to one important problem: technological tools can be expensive, which has resulted in what we call in the United States the “Digital Divide”. In U.S., approximately 60% of American adults are connected to the internet and are on-line. These users are largely from the upper and middle class and have the financial wherewithal to purchase computer and internet services. It is a matter of great concern that the very people who stand to benefit the most from economies to be realized through information technology as outlined earlier in my discussion on e-commerce are the ones least able to afford it. It is the economically disadvantaged that are currently being left out of the IT revolution.

This Digital Divide also transcends national borders. While 60% of American adults are connected to the internet, only about 5% of the global population can make that claim. Some areas, Africa for example, are almost totally disconnected and can only be considered disadvantaged as a result. Herein lays the challenge for the future.

IT applications in sports management are dramatically changing the way that we do business. Thinking through how we can use this kind of equipment and these tools greatly enhances outcomes. The bottom line is that these IT tools are rapidly becoming a necessity for the sports administrator at whatever level in the sports hierarchy they are working.

**CONCLUSION**

Physical education and sports essentially require information technology to increase accessibility and significant development. The smart classes of physical education and sports
require time, facility, space and interactive lesson plans. Technology provides access to information, compresses information, motivate learners, and connect learners to teachers and teacher to the colleagues. There are many available technological innovations nowadays that could be inserted in these fields, like database, networking, internet, e-commerce, etc. Learning of physical education and sports should avail these technological opportunities to make their lesson more real and dynamic worldwide.

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