

Short Communication-4

Application of Information Technology in Sports Management – A Challenge

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Poor performance of Indian athletes in various international level competitions is a matter of great worry for the people of the country in general and sports planners in particular. Government of India is making every effort to look into the reasons of miserable performance of our athletes. Even extensive scientific explorations have been undertaken to bring into limelight the factors of poor sports performance. More than two decades have passed by when Sports Authority of India was established and an organised effort was undertaken to look into the reasons of debacle of Indian sports and even this has yielded no fruitful results. Sports administration and planning is often blamed for the sports disaster.

There is a need to plan and explore all the possibilities to address the problem. It is very pertinent that one of the important spheres to be explored is sports administration with the use of technological revolutions. This article will try to provide a general idea of how information technology (called IT) can result in positive change in the nature of management practices in sport. Following four approaches are suggested:

1. Application of "technological revolution" to the administration of sport.
2. Application of Internet and World Wide Web in specific management functions such as training and marketing.
3. Application of e-commerce to make participation in sports more available through lower priced equipment and lastly
4. The digital divide: and underlying condition that keeps some from participating fully in the benefits in the IT revolution.

Application of "Technological Revolution" To the Administration of Sport

The close of the last millennium has witnessed a basic change that is moving the world from the age of industry to the age of information. The currency in this 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 methods used for the identification, organisation 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 vital piece of apparatus that lies at the heart of the whole IT process is the computer. The computer and the software that it runs is a vital component in the new societal paradigm and it is a key to success for the modern sports manager. It is this piece of equipment that allows the sports administrator to maximise the return on limited resources whether this is people, facilities and equipment or finances. In turn, it is also possibly the single most important tool to the sports administrator to extend the reach of sport and recreational programming to as many probable 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 in 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 databases. A database is nothing more than an organised collection of common records that can be searched, accessed and modified. Database software is very widespread as most standard office computer software packages will typically have a simple database programme in addition to word processing, spreadsheet and presentation applications. There is, however, a far more powerful and useful kind of database for sport managers than the one that comes in the standard software suite: the relational database. A relational database is a data management system that stores information in a series of tables consisting of rows and columns of data. When the operator conducts 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 instance 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 scheduled event can be pulled from one table, a roster that has the names of qualified referees who can officiate the event from another table, their availability from a third table resulting in a report that lists all of the personnel who can undertake the officiating task at the appointed place at the appointed time. This task 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 numerous of other tasks associated with the competition ranging from facility scheduling, equipment set up and knock-down.

From the abovementioned the value of using IT tools can be readily realised for the organisation of a competition. These tools are even more important for the day-to-day operation of the sport organisation as can be seen by the kinds of sport programme information that can be contained within these databases.

First is athlete specific information such as team rosters that include biographic information including name, sex, age, contact information and even clothing sizes for team uniforms. The same database may also contain details on medical conditions, performance history, or other participation characteristics of the athletes. Another common use is the development of rosters of programme support personnel such as officials, timekeepers, drivers, or medical

staff. Aside from details such as their addresses, 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 professional. Databases are particularly useful for tracking donors or potential donors whether and they contribute money or in-kind services. In addition to the expected biographic information will be other keys to 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 types of administrative information. Examples include accounting and business records, employee files, equipment inventories or facility maintenance records. The organisational marketing information system (MIS) is also typically a database programme 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 programmes talk to each other?" Can, for example, the data entered in the MIS resulting from ticket sales be imported directly to the accounting programme?

To be effective, databases can and should be regularly updated to record changes. Bear in mind that the passage of time presents a more comprehensive picture of most activities and the ability to record change and make sense of it is essential for long term survival. Further, there is nothing so constant as change, particularly in sports organisations, 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 had on the organisation.

As great as databases are for effective sport programme management, the real power of information technology comes when individual computers are tied together through the medium of a network. This is truly a 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 resources. Larger enterprises use computer networks to link together their operatives in a common computing environment. All of the permutations and configurations available to the sports administrator are clearly beyond the scope of this presentation except to note that the most common configuration of these kinds of networks are of the client - server variety. This type of network is has a main server that houses most of the information and database files. The individual operatives access the server through their desktop terminals or workstations which are called clients.

Aside from 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 a using a number of mediocre workstation printers. A powerful server can substantially increase computing speed and effectiveness throughout an organisation. So what are the key issues to be addressed when considering the acquisition and implementation of an organisational IT system?

First and foremost, once the decision is made to introduce IT systems to the organisation, the table of organisation 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 organisational

processes. The adoption of an 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 organisation will need? Capacity should not be underestimated as a relational database can consume huge amounts of memory. So do other strategies that enhance organisational 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 packages are usually developed on the basis of the lowest common denominator for a group of potential clients. It is not uncommon that only about 80% of an organisation's needs are met by an off-the-shelf product. So the sport administrator is left with the choice of writing their own software programmes or adapting organisational 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 the 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.

Application of 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 a country. For example, all of 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 "the Internet". While the Internet has been around for decades, the Web is a comparatively new innovation first introduced in the mid 1990s. It is a digital medium which presents information in text, audio and graphics in a simple hyper-text computer language understandable by a browser. This medium has simply exploded and today there are more than 20 million web addresses called Uniform Resource Locators (URLs), many with hundreds of individual pages on their sites. Thousands or 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 Sport

Science degree through the Web without leaving their home. The same possibilities exist at the undergraduate level through the International Sports Academy.

But most significant at this juncture is the marketing and commerce applications of the web. There are virtually no professional sports teams 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 teams in ways that the developers of this technology never envisioned. For example, there are no English language radio broadcasts in Montreal for the Montreal Expos 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 of how the Internet will affect sports in the future: through the changing of the way that the sports fan will consume the sport product. Where in its infancy sport marketing did not extend much beyond putting out a sign on the side walk saying "Game Today", now sports teams 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 in 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 "web casting" will bring to sports fans events that could never before be seen on traditional broadcast media. 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.

Application of E-Commerce

It is also proper to briefly examine how the web will change the sale and distribution of sporting goods which central to running sport programmes. The relative cost for sports equipment can be an issue for the profession, particularly in terms of trying to broaden the appeal of sport 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 distribution 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 through middlemen, the mark-up in distribution can be reduced to as little as 50% of the

traditional retail price resulting in a sale price to the end user of about \$80. Very simply, the more 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 and 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 turn over is expected to pass \$1 trillion.

The Digital Divide

In closing it would be negligence on our part if attention is not paid to one of the important problems resulting from expensive technological tools. This is called "Digital Divide". For example in the U.S., approximately 60% of American adults are linked to the Internet and are on-line. These users are mainly from the upper and middle class and have the financial ability to purchase computers and Internet services. It is a matter of great concern that the very people who stand to benefit the most from economies to be realised through information technology as outlined earlier under 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 and parts of India for example, are almost

totally disconnected and can only be considered disadvantaged as a result. Herein lies the challenge for the future.

IT applications in sports management are noticeably 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.