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Database Knowledge Management in Sport

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Abstract

Today, data-based management technologies that can serve as a basis for sports management, aiming to improve the efficiency in sports services, provide opportunity to intervene in possible problems faster and more accurately, offer a better quality of service or product and targeting transition to an inclusive, transparent and accountable knowledge management approach. It's clear that quality, efficiency and effectiveness can be increased in sports management areas if the data-based management models offered by today's developing technology are used in sports management fields. In the research, database management applications and the contributions of these applications on the field of knowledge management in sports has been examined in line with the information gathered from various sources. The study emphasizes the importance of database sports management applications in line with today's developments and is expected to contribute to the transition to an integrated sports knowledge management model in countrywide.

Keywords: Sports, Management, Knowledge Management, Database, Database Management

Introduction

The development in field of information and communication technologies, the effects of globalization and the "network economies" arising from the combination of these dynamics, have led to an inevitable paradigm transformation of the social dimension. This is the transformation that has left its mark in our time and defined by the terms such as "information revolution" and "knowledge society". Knowledge on the base of capital and information on the basis of economic activity is circulating and encompasses the world with a network structure, this is not limited only to the economy, it's established also in social relations with the surplus value offered by the networks interaction and also dominates the social dimension. This socio-economic transformation affects diresctly the management styles and the functioning mechanisms of the state (Uçkan, 2002).

Societies transformed by information to knowledge society, point to a new social order, based on information technologies and informatics systems, where production processes evolve to be information-based or knowledge-driven (Akyazı, 2007). In the light of these developments, the traditional understanding of public administration in the social order is now being replaced by the "new public administration" approach. Along with the downsizing of public administration, the governments became more efficient, state has led to a faster delivery of public services and a trend towards a customer-oriented approach in public services. The new public management approach also adopts “total quality management” and a “customer-oriented” approach that is an important part of it. In addition, developments such as the use of information and communication technologies in public administration, increase demands of citizens for quality service from public administration, transparency in burocracy and guide those who benefit from public services to participate more in the decision-making process and lead public administrations to adopt a customer (citizen)-oriented approaches. In this respect, it is now a necessity for the administrations to target the quality in public services and new changes and transformations should take place at the level of thought and implementation (Sezer, 2008).

In this respect, the only way for today's operators to identify and implement the right strategies and policies is to make decisions in the light of sound and reliable data. As long as this is not realized, the goals set by the organizations cannot be realistic and go beyond estimates. For this reason, systematically kept data provides information about the real positions of the businesses, as well as the opportunity to make comparisons with competitors and to determine the desired goals by acquiring more realistic ideas. Accordingly, the cause-effect relationships in the events taking place within the institution should be analysed using statistical methods whenever possible. The basic condition of development is to ensure continuous improvement by preventing errors in the production / service phase (Alpullu, 2006).

In this direction, thanks to the database management systems developed today, significant steps have been taken to meet the need for specific information for adopting a knowledge based management transformation. Managing information means moving towards what works for us and what is useful for the tasks we perform. Using a database management system, added and collected data to the system's database is no longer subject to disorder and accident. Data is now more accessible and easier to integrate with the rest of our works. Managing information using the database enables us to be strategic users of the data which we possess (Watt & Eng, 2014). Such systems and technologies developed today offer an opportunity for transition to quality management understanding. Especially, technologies that include

database management systems make it easier for individuals to access necessary products and services and by presenting information regarding their needs to management levels, necessary measures can be taken quickly. If we can talk about concepts such as quality, speed, transparency, easy accessibility or new public administration, "e-government" in the services performed in Turkey today, it is possible with the contributions of database technologies. Thanks to the aforementioned technology, the E-government system is considered to function as an important tool in bringing the masses together with products and services, while providing important facilities especially in the public service sector. There has been a need to examine the contributions of database management systems to the new public administration and the service sector, regarding the reflections of the sports sector today.

METHOD

The purpose of this study; to recognize and define data-based sports management practices that have been developed in the guidence of today's technological developments in order to realize a better sports management based on knowledge on behalf of everyone involved in sports institutions and organizations. In addition, it is to emphasize the importance of data-based sports management applications that can provide information to sports management levels by gathering sports management services under a single roof. With this study, we try to give information about the databases in line with the new public administration and the applications that have gained popularity in the world. Hereby the current data-based sports management applications needed by the Turkish sports management were handled and evaluated accordingly. The description method was used in the research and literature review techniques were also used.

FINDINGS

Relationship Between Data, Information and Knowledge

In today's business life, managers, whether private or public, make their managerial decisions by analysing data from lower-level work and transaction processes. In other words, in today's businesses, the information transferred to management levels by analysing the data filtered from production and service processes shapes the decisions of managers. The data, information and knowledge that managers need are linked, but they are not the same thing. Here in Table 1. are some definitions of data, information and knowledge.

Table 1: Definitions of Data, Information, Knowledge

Data	**Information**	**Knowledge**	**Autor**
Are symbols	Processed data to be useful	Capability to answer ‘‘How’’ questions	Ackoff (1989)
	Data in context	Integrated information in context	Gallup et al. (2002)
Unstructured facts and figures that have the least impact on the typical manager. (Thierauf, 1999)	Ordered data useful for decision making and analysis	based on experience of experts	Thierauf and Hoctor (2006)
Converted sensors outputs	Data fusion; creating a network that connects both data and relationships between data	Placing knowledge in its broader context (a necessary condition for understanding)	Desouza (2005)
Unorganized, static and unprocessed facts. Different facts about the events	Facts based on processed or reformatted data. Collection of data that facilitates decision making and has a purpose, meaning and relevance	The higher level of abstraction found in people's minds. Includes skills, perception, common sense, education, advertising experiences	Awad and Ghaziri (2004)

Ackoff (1989) was formulating Data-Information-Knowledge-Wisdom hierarchy (or DIKW for short) in an article for a presidential address to the International Society for General Systems Research. This Figure 1. may help us to explain his approach.

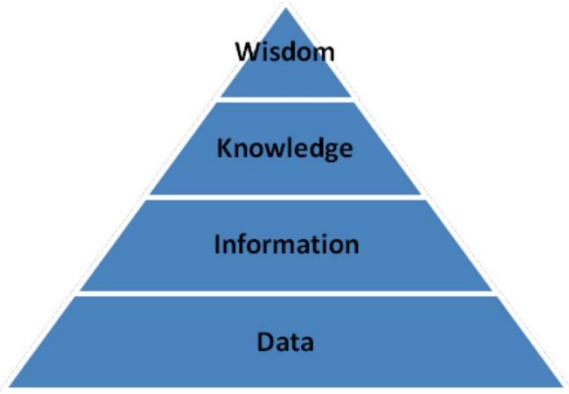

Figure 1. The Data-Information-Knowledge-Wisdom hierarchy as a pyramid (Ackoff, 1989)

In his terms, data are the product of observations and symbols and have no value until they are transformed into a usable form to become information. When it comes to information, they are now included in the answers of the questions. The next layer, knowledge, by refining the information "provides the conversion of information into instructions and control of the system" (Ackoff, 1989), which ensures the efficient operation of the system. Although there is no common understanding in detail about the transformation process between layers of the hierarchy, Rowley (2007) assumes that information is created based on data, knowledge is created based on information and wisdom is created on knowledge. According to Mutongi

(2016), putting information in a hierarchy makes the information itself smaller. Knowledge is greater than the DIKW hierarchy and reside in all levels such as data, information, knowledge and wisdom. In organizations, knowledge is found in every department and stage. Knowledge is the main factor that enables the organization to survive in a competitive environment. Wiig (1998) states that the process by which we develop knowledge, uses previous knowledge to make sense of new information and when accepted for inclusion, internalizes new insights by connecting with previous knowledge. Therefore, new knowledge is a function of previous knowledge as well as input received. Hence he emphasizes the discontinuity between information and knowledge. Thus, discontinuity is created between the received information inputs and the new information that comes out.

As pointed out by Liew (2007), the key to understanding the relationship between knowledge and information is knowing, where information resides. It is useful to know that the essence of information is a message generated from activities and situations. However, information exists in the form of data in storage media (database, print, video tapes, etc.) and in the human mind (in the simplest "What" form or more advanced "How" and "Why" form). In this way, the overlap between information and knowledge between data and information becomes clear, ie they occupy different space at the same time. This also explains why many people perceive data and information as interchangeable, as well as information and knowledge. "… Depending on the context, one man's data may be another man's knowledge and vice versa" (Stewart, 2002). However, they are not interchangeable with regard to their accepted definitions. So what is a book: data, information or knowledge? These are all of the above in various contexts. The book is knowledge from the author's point of view, information for the potential reader and also data on a storage platform (called a "book").

Knowledge Management (KM)

There are many definitions of knowledge management (KM), some of which are as follows. O'Dell and Grayson (1998) define Knowledge Management as a conscious strategy that delivers the right knowledge to the right people at the right time and helps people share information and put it into action in ways that seek to improve organizational performance. According to Davenport and Prusak (1998), Knowledge Management leverages the resources that the organization may already have in on-site information systems management, organizational change management and human resource management practices. Jennex, M. (2007) defines knowledge management as the selective application of knowledge from previous decision-making experiences to current and future decision-making activities with a clear purpose to increase the effectiveness of the organization. Davenport, Long & Beers (1999) defines knowledge management "to manage knowledge combined with experience, context, interpretation and reflection". Ruggles (1997) define as an approach to add or create value by making more active use of the knowledge, experience and judgment found within and in most cases outside of an organization.

Looking at the definitions, we can say that KM's is involved with practices, process, insights, technologies, people, advice, improvement etc. Hence, knowledge management includes several other functions as explained below.

1. Knowledge generation and sourcing - Innovation, learning and building knowledge from external sources: From outside and internal experts, R&D and learning syllabus, books, articles, etc. by gathering information.

2. Knowledge collecting and transforming - Organizing, keeping and remembering information in memory: Reconstructing, verifying and organizing the inventory, extracting old and false information, etc.

3. Dissemination of knowledge - Pooling and distribution of knowledge from many sources: Dissemination - placement of knowledge to people or systems where it is needed.

4. Knowledge application and value realization - Applying knowledge to study objects: Using knowledge to create and deliver products and services.

According Wiig, (1997) KM involves four areas cited above from a managerial perspective. Briefly they are systematic of emphasis which focus on top-down monitoring and facilitation of knowledge-related activities, creation and maintenance of knowledge infrastructure, organizing and renewing knowledge assets, and applying (using) the knowledge assets.

Databases Developments

Mankind has begun to store information long time ago. The origin of the database goes back to the times when libraries, government agencies, business and health records were kept before computers invention. Once people perceive that they need tools to store data and protect data files for retrieval later, they sought ways to index, store and retrieve data. In ancient times, detailed database systems were developed for government offices, libraries, hospitals and business organizations. The concepts and principles used in the construction of these systems are still used today. From ancient times to relational and objective relational systems today, database technology has passed over several generations and the historical development process has been quite impressive. With the development of computers, the database world has changed rapidly and databases have become an easy, cost-effective and less space-consuming tool. (Berg, Seymour, & Goel, 2012). Today's managers can obtain meaningful information by comparing and analysing the data they obtain with various computer-based software. According Vincent (2009) database is; a collection of logically related records or files that are integrated into a common repository and provide data for one or more uses.

Database management systems were invented in the 1960s to support hierarchical databases. The first systems (alphabetical, numerical or chronological) are arranged in order to access data indexes directly or randomly, we had to wait for development of data storage devices. Among the best known data-based management systems at that time were IBM Information Management System and CA Integrated Database Management System (Bastien, 2019). In the 1970s, database management models such as the "Entity-Relationship Model" developed by Pin and Chen (1976), including systems such as "network model", "relational model" and "entity set model", stand out. Software based on this type of relational model was developed in the 1970s. Today, managing such a relational database remains a popular method. Currently, the most well-known relational DBMS are Microsoft SQL Server, Oracle Database, IBM DB2 and MySQL. A standardized programming language used to manage relational databases and perform various operations on the data is SQL (Structured Query Language). This language was created in the 1970s and continues to be used regularly by database administrators (Bastien, 2019). With the explosion of computer purchases in the 1980s and the emergence of the database market for businesses, the commercialization of relational data-based systems begins (Taylor, 2007). In 1986, the American National Standards Institute (ANSI) was adopted an official SQL standard. In 1987, the International

Standards Organization (ISO) also acknowledged this standard and it has been updated more than six times since then (Bastien, 2019). In the mid-1990s, the Internet / World Wide Web emerged and became widely available. This development allowed remote access to computer systems with existing data and as the client-server craze reached the desktop of the average users, Internet / VT has grown exponentially (Berg, Seymour, & Goel, 2012). Although electronic applications in information centers have a history of more than 30 years, it has moved to a new dimension especially in the 2000s. Web 2.0 applications, the first examples of which we started to see in the 2000s and recent developments in the analysis of semantic Web and large amount of data, affect information services in electronic media in a multifaceted way. Developing of technological possibilities, allow processing in the huge information pool and establishing relationships between complex data sets. However, what all these systems need is content that is digital, structured as much as possible, in other words defined metadata fields in accordance with standards (Külcü, 2018).

Databased Management Systems (DBMS) Structure

Database management system is a set of software that provides communication between the user and the database. In more detail, a database management system is a software that allows an organization to manage data effectively and provides easy access for application programmers to access stored data. The database management system ensures that; more than one information is kept in the same environment, rapid access to this information, the prevention of information repetition, accurately and quickly performed continuous transactions, using by more than one person at the same time the same information and data security. (Alp et al. 2011).

Database management system (DBMS) is a collection of programs that allows users to store, maintain, control and access to the created databases. The main purpose of a DBMS is to provide both a useful and efficient environment for users to obtain and store information (Watt & Eng, 2014). In other words, a database is a self-defining aggregate of records. Registration is a representation of some physical or conceptual object. Since a database contains a description of its structure, we can say that it defines itself. This definition is called metadata - data about data. The database is integrated to include relationships and includes its own data as well as other data items (Kroenke & Auer, 2007).

Database management system term; it includes a complete database and all the software related to management on. It is possible to divide the databases into two levels:

- Logical Layer
- Physical Layer

Accordingly, the layer, which is the logical layer and expressed relative to the above, is the layer that is closer to human thought and is more comfortable for people to think and use. The layer expressed by the physical layer is about how and where computers keep data. The system meant by database management system includes these two layers as a core. Database management systems are systems that contain many additional software such as user management, system backup and restore, performance monitoring and improvement and distributed database operation (Şeker, 2019).

Databases play an increasingly important role in traditional management (accounting, sales, decision making, etc.) practices, especially in e-commerce or customer relationship

management, that concern corporate information systems. Database systems have an important place especially in management and informatics today (Gardarin, 2003).

Big Data

Big data; is the form of converting all data collected from various sources such as social media posts, networks, blogs, photographs, videos and log files into meaningful and processable form. As usual, it's an unstructured data collection that remains outside of the structured data kept in relational databases and has not been used much until recently. According to the widespread computing belief which is now demolished, unstructured data was worthless, but big data showed us something that it is the only system that is enormously important, usable, useful and has led to the emergence of treasure from the garbage dump today. Big data; It consists of a large amount of information such as web server logs, internet statistics, social media publications, blogs, microblogs, information from climate sensors and similar sensors, call logs from GSM operators.

Recent advances have reached the climax of advancement making big data possible in the ability to quantify, store and analyse data. The first progress in this area has been made in "data generation". The digitization of information gathered from communication devices and digital sensors has enabled the quantification of many qualities that have never been converted into data before. The second development is that the data storage capacity increases exponentially and the costs decrease accordingly. In 2000, only a quarter of the information stored in the world was digital and the rest consisted of analog (paper, book, film, photograph, cassette, etc.) data, while by 2007 only 7% of the data remained analog. It is estimated that more than 98 percent of all data in 2013 was digital. Today, stronger computer processing capabilities and advanced algorithms are developed, allowing information to be analysed in new and interesting ways. Big data is a major source of competitive advantage already existing for companies and new initiatives are emerging to use big data in innovative ways. A series of predictive machine-generated content whether users are aware of it or not; examples of e-commerce are available today, such as an alternative writing for your web search, the next book you might want to read, which ads interest you or the ideal time to buy a low-priced airline ticket (Dunham, 2015).

Database Management Applications in Sports Management

Today, the success of an organization depends on its ability to manage activities such as obtaining accurate and instantaneous data from its own actions, using and analysing the acquired data more than at any time (Ramakrishnan & Gehrke, 2002). The use of multimedia databases in sports has the potential to revolutionize the way which coaches, athletes, managers and society approach sport. In this way, social approach to sports such as evaluating sports branches, selecting athletes for teams, applying training programs, and mass participation in amateur and professional sports can be affected. Many talented, top coaches and sports managers make decisions based on intuition and the influence of past experience. Effective use of performance databases encourages sports managers to use an evidence-based decision-making approach. This does not mean that they should let go of their "intuition", rather it is ensured that the valued data is included in the decision making process. If the data based information does not support the intuition, it may be wrong, but at least there is reason to justify the decision. With the emergence of online databases in sports, evidence-based decision making has now become practical (Vincent et al., 2009).

Databases with tools such as data acquisition, storage, management, retrieval, integration, analysis, interpretation, reporting and dissemination have the potential to be a powerful model in sports science. Knowing how information will be collected, stored, accessed, retrieved and consolidated is essential for effective performance analysis and decision making. Databases, as they provide structure and access to information in many other applications, should form the basis of application tools used in sports sciences (Vincent et al., 2009).

Data-based sports software developed today can generate instant data, information and statistics that can meet the needs of sports clubs, organizations and federations, starting from the basic competitions. Here, useful data and information can be produced based on the principle of responding to the needs of institutions, organizations and businesses in general, regardless of whether it is a club, private sports facility or a federation. These statistical data can include the financial status of the enterprise, as well as generate many useful information about staff, customer and facility utilization. The services mentioned below are some examples of the services that such software can offer to sports managers.

• *Competition Management*: Here can define the competitions to be played in the sports management system in detail. It can provide the management of competition elements such as location, date / time information, week, league, competition number, home team, visitor team, referee, assistant referee, observer, last report upload date and task tracking services.

• *Performance Management*: It provides a service that enables the performance of the athletes to be instantly evaluated during the match or training.

• *Accounting Management Service*: In the sports management process, financial accounting, cost analysis and estimation, monitoring of cash flows, income-expense status related to the financial side of the business and customer and profitability analysis can be provided.

• *Warehouse Management Service*: In the event that sports businesses and organizations provide services and products, warehouse planning and control services can be provided in order to estimate the costing and future supply need for goods used or sold in the service process.

• *Customer Management Service*. In addition to preserving the customer portfolio base in sports applications, it is also possible to keep records of customer characteristics and implement a customer-oriented visual course program in sports businesses (including corporate ones). Here, the concept of Customer Relationship Management (a management approach that develops new working strategies in the light of the information obtained by collecting customer data of an enterprise (asen.com.tr)) also comes into play. These applications find a usage area as a software product developed according to the business fields, infrastructure, number of employees and customers by following the work flows in the enterprises.

• *Personnel Management Service*: Enterprises can have the opportunity to monitor the performance of the personnel with the automatic service generation, warning and notifications of the software. By integrating the production module into sports applications, it is possible to monitor the performance of the employees by recording the task timing and service completion of the personnel. Part-time wages and percentages can also be calculated automatically here.

• *Reporting and Documentation Service*: Since related applications store all information in a database, almost any report for management needs can be obtained easily. These types of reports can be generalized, personalized or customized according to management needs and can also be used for analysis and forecasting. As an example; it's possible to create reports such as participatory, attendance, finance management, service completion, marketing, customer analysis and profit analysis.

• *Marketing service*: Actually, no organization can do without publicity today, because such negligence will cause a loss of customers or mass in the enterprises. With the marketing module included in sports management applications, it enables the audience or customers to evaluate the investments in a reasonable way, to analyse the resources and to justify advertising campaigns with various tools (SMS, E-mail bg ..).

These examples of management services that we have explained are just a few of the features that can be added to database sports management applications. For example, database applications such as sport management, also can include; Sports medicine, physical education, nutrition, exercise, recreation, sports and exercise psychology, fitness training, coaching, mental preparation, physical endurance, physical therapy, etc. It should not be forgotten that today's technologies and social needs are in a continuous development. Therefore, it is possible to increase the variety of services outside of the titles mentioned above. In this direction, services that sports management applications can offer are briefly listed in Table 1 below.

Table 2: Database Application Services for Sports (Atasoy & Özer, 2019)

Accounting Management	Team Management	Advertising Management
Facility Management	Competition Management	Store Management
Customer Management	Training Management	Communication Management
Personnel Management	Athlete Management	Media Management
Marketing Management	Performance Management	Volunteer Management
Time Management	Infrastructure Management	Member Management
Organization Management	Sponsor Management	Document Management
League Management	Fan Management	Statistics Management
Club Management	Product Management	Reporting Management

Thanks to this database sports management applications; Achieving the ultimate professional sports results, taking into account the challenging situations, competitiveness of other countries and clubs, superior preparation, use of the latest advanced information about sports activity and the opponent, support from information management during identification and selection of athletes and monitoring their progress, to support the organization of sports events and final results are achieved. Fulfilling these goals requires being prepared, keep

endurance, professional approach, competition culture and knowledge management in all activities and processes that will ensure the sustainability of sports clubs and organizations (Manev & Jakimovski, 2017).

Database Sports Management Practices in The World and Turkish Republic

It is possible to come across various database sport applications worldwide in Russia, Australia, Canada, USA, France, UK, Netherlands etc. We can list the sports management applications commonly used in developed countries in the field of sports as follows: Active Sports, PlayyOn, Ususport, TeamSnap, Club Manager Central, Omni Sport Management, SportsPlus, Team App, SportEasy, Dak Stats, Mobilsporcu, Zedsport, Teamstuff, Sports Engine, C Sharp Sports (Sport Applications, 2019). In addition, existing applications have multiple language options to cover many countries. With addition of the language options to related applications they exceed their existing limits, that enables them to easily take place in international markets and to make more effective analysis by collecting data from the international area. In addition to these applications, some site applications work within the same logic and exhibit similar features. For exemple, site like “injep.fr” the National Youth and Popular Education Institute (INJEP), established by the Ministry of Education and Youth in France, produces useful statistical information and studies by analyzing and synthesizing the data obtained from the field of sports. On the other hand, as in the example of the "Statista" page, statistical content can be produced for many leagues in North America and Europe. Such pages can provide statistical information, facts and market data on various topics related to sports and recreation. In the example of Statista, statistical information about many professional sports (leagues), sports events and marketing, sports activities, health, hobbies as well as parks and outdoor spaces and the arts and culture market are also presented on this page and on related topic pages (Statista, 2020).

In Turkey where sports is offered as a public service, a database application example appears as a system by the Ministry of Youth and Sports under the name of Dynamic - Sports Information System. That system enables the transfer of all sport related work processes within the scope of the ministry's fields of activity and services to the information technology environment with developed software. Persons authorized by the ministry can enter to the Sports Information System at spor.sgm.gov.tr and all citizens via e-Government can enter and carry out related transactions. In the Sports Information System application within the e-Government are; talent screening, athlete, sports staff, private sports facilities, leave procedures, club procedures, penalty information form, international organization procedures, e-signature, training, referee transactions, school sports, athlete health, federation transactions, licensing, sport card and document verification menus. Related transactions can be performed through these menus (Özer & Atasoy, 2019). In the Sports Information System, there are services used by real and legal persons via e-government. In this context, individuals are able to view self-information, can obtain verifiable documents and can fill out applications throughout the e-Government gateway. By transferring all works processes and information technology of the sports media through the Sports Information System, the Ministry of Youth and Sports is forming a database of Turkish sport and is working to ensure the use of sport data from a single source.

As a result of the activity of transferring public services to the electronic environment, e-government aims to create a state structure that has increased its information processing

capacity, prepared for situations that require urgent decisions and responds quickly to needs. In addition, the state's ability to be effective and efficient in providing public services to citizens, develops in direct proportion to its capacity to use information technologies (Ünal & Kiraz, 2016).

While the bureaucratic needs are met at the state levels with the e-government applications that form the basis of the new public administration, database management applications are still being developed on access to different services throughout the society. Today, the need for presenting the supply and demand of real and legal persons for sports products through different data-based platforms, still continues.

DISCUSSION & CONCLUSION

There are some periods in human history when knowledge production has increased exponentially. Within a few decades since the printing press began to be used in Europe, the number of books printed has reached more than the number of books printed in all of Europe until then. With the advances in data processing and storage technologies, the data produced in just a few years reaches several times the analogue and digital data produced so far. In the past, the "sampling" model, which was preferred due to the limitations of data processing tools, even if the data was accessed has now begun to leave its place to a new era where all the data is analysed. Thus much more accurate and detailed analysis can be reached. In addition, with the advent of the internet, data-based monitoring activities have become both easier and more comprehensive. Such activities, which were previously carried out only by intelligence organizations, are applied much more comprehensively by the Internet sites, which have become an indispensable part of our lives, through the information is provided by the user voluntarily. Facebook knows what we like and include our social relationships, Google search habits, Twitter keep our thinks and e-commerce sites know our shopping habits. Mobile operators know who we are talking to, even with whom we spend our holidays and leisure time and how close we are to which friend. Not only companies, but also states capacity to monitor 'citizens' and transactions made over the Internet has increased significantly. Accordingly in the world and Turkey database sports management practices gaining steadily popularity. In all stages of information flow, obtained by the process analysis programs which can be data-driven, controlled, auditable and reportable, helping us to build knowledge for effective management. In addition, these applications create a connection between the providers and consumers of sports services and they can ensure that decisions are taken more accurately and quickly in accordance with the needs. In the work of Manev and Jakimovski (2017) they state that with a management approach based on knowledge, they will be able to successfully develop the sports organization, sports staff and athletes, take good care of their supporters and followers and support them at all times. At the same time, they stated that sports organization strategies could be implemented successfully and if necessary could be changed according to the conditions in sports and that everything could be monitored and analysed simultaneously in the ongoing sports organization.

Based on previous definitions, if we express "knowledge management" as a fluid process formed by the evaluation of past experiences, values, intuitions and information in the minds of those who generally know, the importance of these processes that feed the knowledge in our mind can be emphasized again. In this respect, using such database management systems that provide us information, the database software created for the sports sector helps to make

all stages of the services provided by sports management controllable, auditable, reportable and analytical. On the other hand, one of the most important features of database sports applications is that sports services can be organized in virtual and real environments by establishing a connection between the providers of sports products and services according to works principles. In this way, sports can be organized from the base and it is possible to follow them from the smallest ring.

In traditional public administration, the ethical, democratic and professional values (impartiality, effectiveness, efficiency, accountability, etc.) on which the public service is based; responsibility, accountability, partnership, restructuring, equality, innovation, teamwork, perfectionism, honesty, quality values such as clearance developed over time in the private sector are also added. Among these, accountability has started to be seen as both an ethical and a democratic value in this transformation process, as well as being an important concept in traditional public administration. It is claimed that a new public service will only emerge when the state places itself a strong and stable democracy at the heart of society, when it solves social problems by cooperating with the citizen, when it develops services and when it is compatible with the needs and values of the society (Genç, 2010). Therefore, it is certain that database management applications in sports will add a more advanced dimension based on evidence and objective criteria in management towards ethics, efficiency and productivity. Considering the sports management applications with database used in the world and in our country; it's possible to say that in sports management process in Turkey is yet on the early stages of knowledge management in sport. The reason for this can be said no popularity of database software application use and hereby no enough information acquired who are the possible source of knowledges for sport managers. Therefore, enough sports data cannot be created, the data cannot be compared and analysed in sports management stages. In this case, sports management decisions may be far from objectivity, rather instinctive or intuitive. In this direction, with the database sports software applications subject to our research, can gaining popularity and penetrating into the society. Practical analysis will be possible with real-time data flow from lower-level task groups to management levels. In the light of data and information taken from this database, the manager’s skills can be based on knowledge and hereby they can improve their investment programs and the sports events can be planned more accurately by taking into account the needs and potential of the public. With database information management, we can list some possible gains to management in sports as follows.

• With the follow-up of successful athletes (training, nutrition, mental preparation, etc.), sustainable sportive success will not be left to chance and successful examples can be followed by creating athlete and training memories.

• The development of sports is possible by enabling and facilitating the interlocking of the people with new sports and social ties in the smallest ring. Therefore, with database management applications in sports, the most basic stakeholders such as Referee, Athlete, Trainer, Manager, Official will be able easly to come together around sportive activities or events.

• With the instant and accurate flow of data obtained from database management applications in sports, it will ensure success in providing quality and effective sports services, by increasing knowledge of manager on events and its components.

Transition in knowledge management in sports undoubtedly passes through data, which is the smallest unit of knowledge. Therefore, if the way to be strong in management is to make the

right decisions with the right information, the way to do this is based on reliable and timely taken data. Futher, while the efficiency of management can be measured by making knowledge-based decisions, the knowledge itself depends on the production capacity of the reliable information flow from the smallest unit; data. Since databases are the systems that enable data to be obtained from fast, efficient and reliable environments, the transition to knowledge management in sports management will also be possible thanks to these databases.

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