

The Development of a Management System for The National Sports Development Fund in Thailand

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Abstract

The purposes of the current study were to develop a management system for the national sports development fund in Thailand and 2) to evaluate the developed fund management system. The participants were 15 experts in system development. They were selected by the purposive sampling method. The participants had more than 10 years of programming and system development. The instrument included a management system for the national sports development fund in Thailand and a system evaluation form. The data were analyzed using percentages, mean scores, and standard deviation. The results of the study indicate that the developed management system for national sports development in Thailand has 3 main functions including e-documents, e-tracking, and e-payment. It was also found that the system shows good qualities in terms of functional requirements, functions, usability, and security. The results of the study could be implicated in the design of a technology-based research management system in terms of technology and components employed in the design of the system.

Keywords: management system, sports development, NSDF Thailand

1. Introduction

The role of sports is not only for people's entertainment or citizen health conditions. In fact, sports play a greater role in a country's development. According to Shrinivasa (2018), apart from helping people in a country grow physically, mentally, and socially, sports are also important in the development of a nation in terms of gaining a reputation in world society. Moreover, Jarvie (2003), sports provide a social force for internationalism, peace, and the development of countries in the era of globalization. Regarding the academic area, issues in sports are a growing growing field of study. Such topics as sports management, sports development, and sports science are being created to meet the needs of an industry that is becoming more professional and reaching more people around the world. In addition, large-scale events or sports mega-events have become important parts of local and national development plans in many countries. Sports events can boost tourism, local investment, and jobs, but permanent legacies are rare (Tinaz & Knott, 2021).

It could be seen that a nation's economy is significantly impacted by sports in a variety of ways, including events, sporting goods, and facilities. Therefore, innovation and sports research with the goals such as assisting athletes in improving their performance, developing sports personnel, and increasing the quality of public health are promoted in several countries (Ratten, 2016). In detail, the development of new technologies can not only assist athletes in achieving better competitive results but also make sports and other forms of physical activity more accessible and pleasurable for people in general. A standard incentive might take the form of a novel substance, a different technique to play a game, redesigned athletic facilities, or even an app for a smartphone that keeps track of how active a person is daily (Tjønndal, 2016).

It should be noted that the development of sports needs the participation of personnel in various fields of study from all over the country. It could be seen that countries allocate their budgets for sports development through the form of public sports institutions, sports centers, sports events, etc. One form of government support can be given by providing research funds. This type of budget allows stakeholders to present their ideas on national sports development. To be financially supported by the government budget for sports innovation development, there should be a fair system that allows researchers to get involved (Taylor-Gooby & Martin, 2011). The equality in accessing accessible tax money should belong to everyone.

In Thailand, the government allocates tax money to support sports development through the National Sports Development Fund (NSDF). According to the information provided on the official website, the organization was founded in 2002. The mission of the fund is to provide support and welfare for athletes, provide scholarships for innovation and research in sports development, and work with national sports associations to develop the competitiveness of Thai athletes at both national and international levels. Therefore, people in several areas of sports need to associate with the NSDF, and there is a need for a system that could effectively manage funds and scholarships.

Likewise, national sports development funds are found across Asia. For example, In India, the fund was established in 1998. Since then, it has provided 1,551,800,000 Rupees (19 million USD) to support sport activities around the country (Ministry of Youth Affair and Sport, 2019). Stakeholders can access the fund through a web-based system provided in the official website of the organization. In Singapore, the government also provided opportunities for sport personnel to develop their careers. Scholarships are presented in a government grant website (<https://oursgrants.gov.sg/>). However, it seems that there is no specific system for sport development funds.

As a result, it is necessary to have a research fund management system that could allow equal, accessible, and systematic competition among researchers seeking to receive national research budgets. According to Holynsky (2017), a good research fund management system not only effectively runs the processes of the scholarship, but also prevents unfair management issues such as bias, corruption, and injustice in consideration of the funds. Studies (e.g., Jonkers & Zacharewicz, 2016; Latham, 2012; Tom & Michiel, 2018; Velde et al., 2014) have presented the principles of designing a management system for scholarship in the new era. The following issues are commonly taken into consideration.

Accessibility

Accessibility is a key principle in a system related to managing databases in the new era. With the power of advanced network technology, the system should be designed to be accessible and useable regardless of the time and location of users. Latham (2012) suggested that a system should be easily utilized by everyone with certain technical knowledge, and specific functions should only be equipped only when necessary.

Transparency

Basically, the system is developed to manage tax money for the benefit of the nation. Therefore, the transparency of the system should be considered. Users should be allowed to track the progress of the proposal. The decision of providing or not providing a scholarship should be clarified.

Progress tracking

The function to track the progress of the project is essential for users and administrators. It allows scholars to report the progress of their work. The committees would also be able to decide whether the project is satisfying to continuously be funded or not.

Balance

The system designers should also be aware of the balance of the users. Complex processes that require technical knowledge to complete might not be appropriate for certain groups of users and cause misunderstanding in data transfers.

Sustainability

The sustainability of the system contributes to the flow of work. The system should not have too many bugs, and it should be continuously upgraded considering the advanced technology that would make the system more user-friendly.

In conclusion, innovation and research in sports play a great role in developing both sports and a country as a whole. Moreover, government funds are important for the development of innovation and technology that could be beneficial for athletes, sports entrepreneurs, and the health of the people in the country. The purposes of the study were 1) to develop a management system for the national sports development fund in Thailand and 2) to evaluate the developed fund management system.

2. Methodology

2.1 participants

The participants were 15 experts in system development. They were selected by the purposive sampling method. The participants had more than 10 years of programming and system development. They were assigned to

evaluate the effectiveness of the system. The result of the evaluation was kept secret. The evaluation process was in a blinded review.

2.2 Instruments

The instrument included a management system for the national sports development fund in Thailand and a system evaluation form. The management system consists of the 3 main components including e-form, e-tracking, and e-payment. The evaluation form consists of 4 components of functional requirement, functions, usability, and security.

2.3 Data Analysis

The data were analyzed using percentages, mean scores, and standard deviation.

3. Results

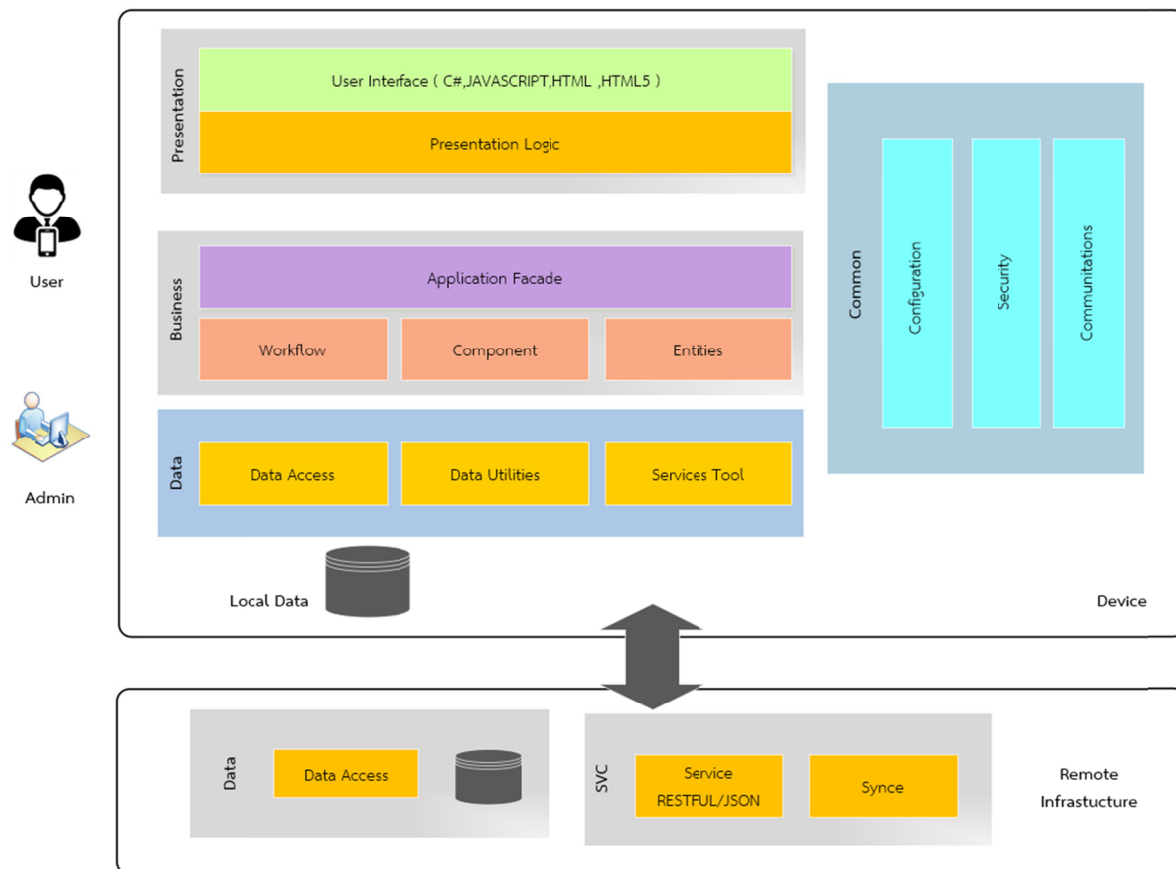


Figure 1. Software architecture

The management system for national sports development fund in Thailand was designed to facilitate both users and administrators in managing the scholarships granted each year. The key features of the system are e-form, e-tracking, and e-payment. Therefore, scholars and staff can input the proposal and generate documents, track the progress of the scholarship, and manage financial documents online. Remote infrastructure was also created to store the data and parallelly update them. Web App, HTML5 (Hyper Text Markup Language), AngularJS, .NET Framework, ASP.NET, JavaScript, Application Programming Interface, JSON (JavaScript Object Notation), PostgreSQL, and Bootstrap were used in the design and development of the system. The interface of the system can be seen in the Appendix A. The evaluation of the system can be seen below.

Table 1. The evaluation of the management system for national sports development fund

Aspects of evaluation	\bar{x}	S.D
Functional requirements		
System capability in data searching	4.13	0.81
System capability in data management	4.27	0.77
System capability in tracking e-Tracking	4.27	0.68
System capability in inputting data and generating e-documents (e-Form)	4.33	0.60
System capability in decreasing complexity of financial regulations(e-Payment)	4.33	0.79
System capability in contributing accessibility, working standard, and checkability	4.40	0.61
Average	4.29	0.71
Functions		
Correctness of the system function	4.07	0.57
Datail of e-documents	4.33	0.60
Correctness of input functions	4.47	0.62
Correctness of searching systems	4.33	0.60
Correctness of individual reports	4.20	0.65
Average	4.28	0.61
Usability		
Ease of the system	4.20	0.75
The appropriateness of the system interface	4.27	0.68
The appropriateness of tone and color	4.20	0.65
The appropriateness of fonts	4.40	0.61
The appropriateness of language	4.20	0.54
Processing speed	4.13	0.88
Average	4.23	0.69
Security		
The appropriateness of input security system	4.27	0.93
The appropriateness of users' right design	4.40	0.61
The appropriateness of system security	4.27	0.85
Average	4.31	0.80
Overall	4.27	0.70

The system evaluation by 15 experts indicates a high level of appropriateness of the management system for national sports development fund overall ($\bar{x} = 4.27$, S.D = 0.70). All the aspects of evaluations including security ($\bar{x} = 4.31$, S.D = 0.80), functional requirements ($\bar{x} = 4.29$, S.D = 0.71), functions ($\bar{x} = 4.28$, S.D = 0.61), and usability ($\bar{x} = 4.23$, S.D = 0.69) respectively. It could be interpreted that the the research fund management system was appropriate as a tool to manage government budget for national sports development in Thailand.

Moreover, the experts suggested recommendations for system improvement. In detail, a mobile application should also be developed to let users access the system more comfortably. The system should include a separate section for each sports association. The e-documents section can still be improved to let users fill in only necessary data. The system should provide data for the management and policymakers to improve research fund management. The system should also be able to connect the ERP to increase the speed of data transfer.

4. Discussions

The results of the study indicate that the developed management system for the national sports development fund in Thailand was found to be appropriate and applicable in the real context. Considering the developmental process of the system, the following issues can be discussed.

First, the study confirms the importance of a technology-based research fund management system as seen in other studies (e.g., Jonkers & Zacharewicz, 2016; Latham, 2012; Tom & Michiel, 2018; Velde et al., 2014). For decades, network technology has influenced clerical work. The nature research fund management is a coordination between the fund owner, the Thai government in this case, and the scholars seeking scholarships. Therefore, advanced technology plays a great role in facilitating stakeholders and completing the process of fund management.

In addition, accessibility, ease of use, fairness, and trackability were the key components in the design of the system. These components have also been considered in the design of budget management systems around the globe. It has to be noted that to gain support from the government means that a person has the right to access tax money. Therefore, the whole system needs to be justified and fair. The fairness of the government budget is also

a key component in democracy development.

5. Conclusion

The current study was conducted to develop a management system for Thailand's national sports development fund and to evaluate its' quality before implementing the system. It was found that the system has good qualities in terms of functional requirements, functions, usability, and security. Therefore, it could be implemented as a tool to support research fund management for national sports development in the country.

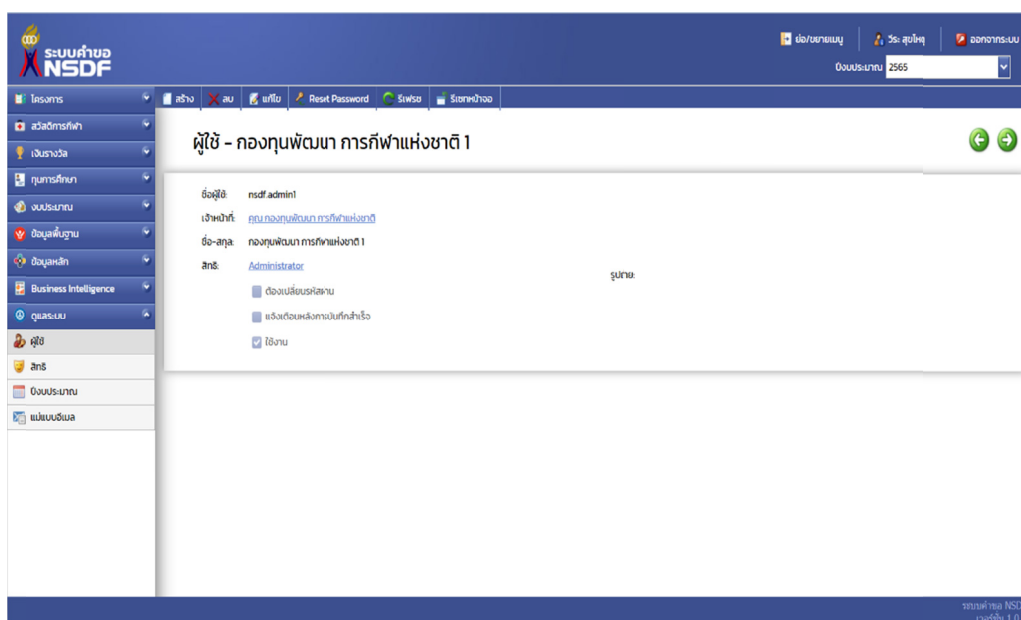
The results of the study could be implicated in the design of a technology-based research management system. Technology such as Web App, HTML5 (Hyper Text Markup Language), AngularJS, .NET Framework, ASP.NET, JavaScript, Application Programming Interface, JSON (JavaScript Object Notation), PostgreSQL, and Bootstrap could be used in designing the system. Moreover, the function of e-document, e-tracking, and e-payment could be an example of a design that brings about accessibility, ease of use, fairness, and trackability to the system.

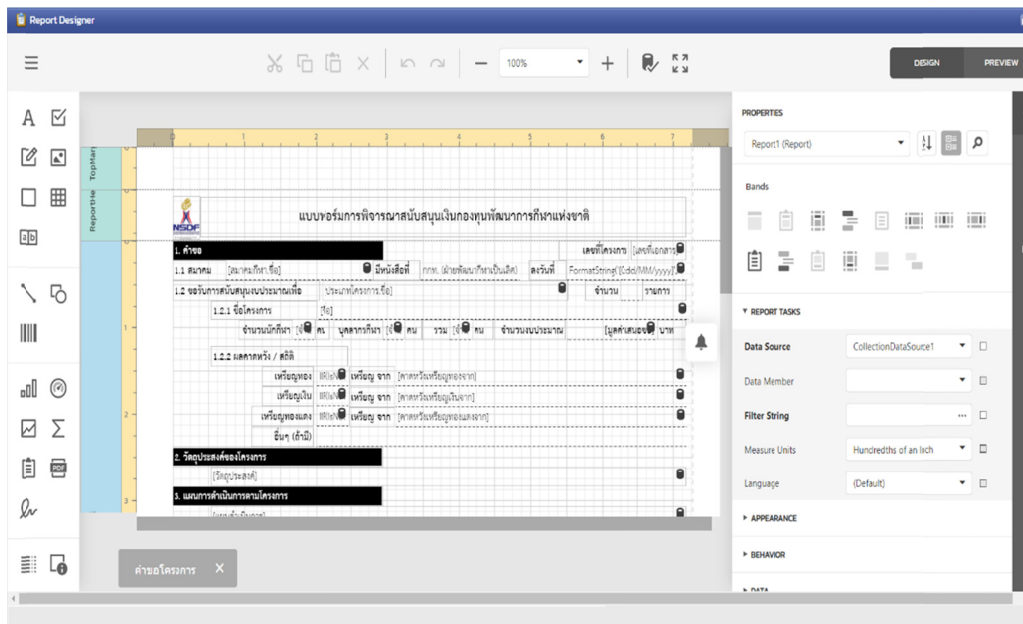
However, the study bears limitations in design as it investigated only the pre-service stage of the system. Therefore, studying users' satisfaction might provide a broader picture of the advantages and disadvantages of the system. Moreover, adding qualitative data collection processes such as interviewing, observation, etc. could review the quality of the system from another aspect.

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Appendix A
System interface





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