

The web site of the Japan Table Tennis Association

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Abstract: In 1996, as a joint project with Niigata University, the Japan Table Tennis Association (JTТА) established a formal web site (<http://www-jtta.ge.niigata-u.ac.jp>). Its content was wide-ranging and useful. Over the past five years, access to the home page amounted to 580,000 hits. In this study, we evaluated the effectiveness of our web site and the change in the number of users accessing the site from 1996 to June 2001. The number of hits increased year on year. The site also facilitated the exchange of information with other countries. In particular, the 'Meeting Room' and 'Sports Science' pages were found to be effective in this respect. Further, even though there were a very large number of hits from people accessing the 'Rapid Communication System' page during the 2000 Table Tennis Championships, the site was able to deal with them. Lastly, the site was proven effective in offering both accurate information and speedy service.

(Key words: web site, the Japan Table Tennis Association, meeting rooms, sports science information, rapid communication system)

1 Introduction

In April 1996, the Japan Table Tennis Association (JTТА) began to provide an official web site (at <http://www-jtta.ge.niigata-u.ac.jp>) as a joint project with Niigata University. From that time, the number-of-hits counter showed a steady annual rise in access by Internet users, with the total access to the home page exceeding 580,000 hits over the past five years. The home page of the site is as shown in Figure 1. This web site was originally designed as a joint project, The Development of a Computer Network to Disseminate Sports Science Information, between JTТА and Niigata University. At its establishment, the web site was located at Niigata University, and was connected to the Internet over the academic network system.

By June 2001, Internet use had increased in popularity, and the site in this study (which was jointly established between the JTТА and Niigata University), had been seen to have fulfilled an important role for members of the JTТА to share a wide range of information. Consequently, we deemed that the objective of our joint project had been attained.

The location of the site was moved from Niigata University to <http://www.jtta.or.jp> (as an independent web site of the JTТА) on June 23, 2001.

With the conclusion of our joint project, therefore, we report the main accomplishments of our web site. In this study, we further evaluated the usefulness of our web site and the change in the number of users accessing this site since the establishment of the system from April 1996, to June 2001, when the site was turned over to the new JTTA site.

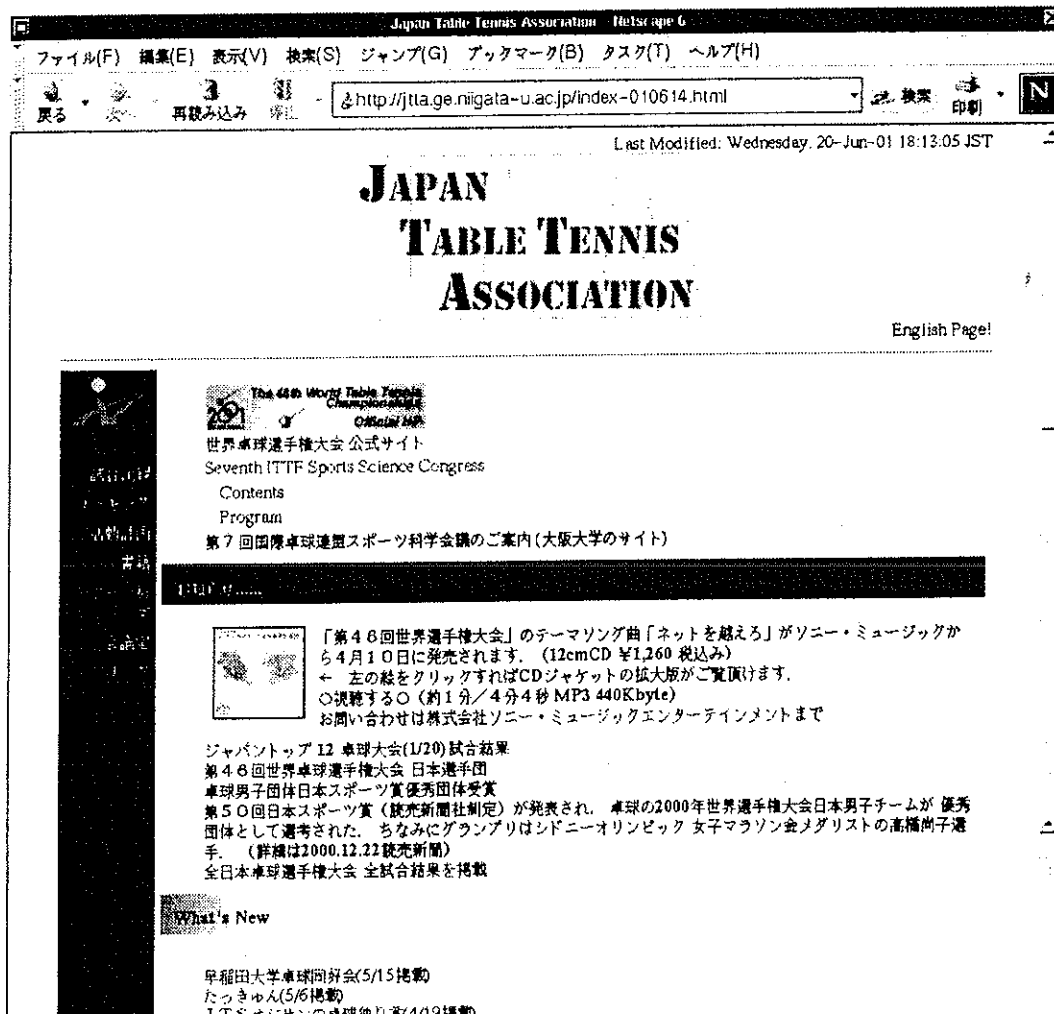


Figure 1. The home page of the web site of the JTTA

2 Contents of the web site

This web site consisted of several categories, as shown in Figure 2. The information able to be accessed was as follows:

- (1) 'Results of Matches': the results of major domestic tournaments
- (2) 'Rankings': a link to the official world rankings evaluated by the International Table Tennis Federation
- (3) 'Events': an annual schedule for upcoming events
- (4) 'Publications': lists of publications related to table tennis
- (5) 'Sports Science': *Sports Science Handbook*, medical science studies, etc.
- (6) 'Meeting Room': A Bulletin Board System (BBS) which was called

'Meeting Room' on our web site.
 (7) 'Links'

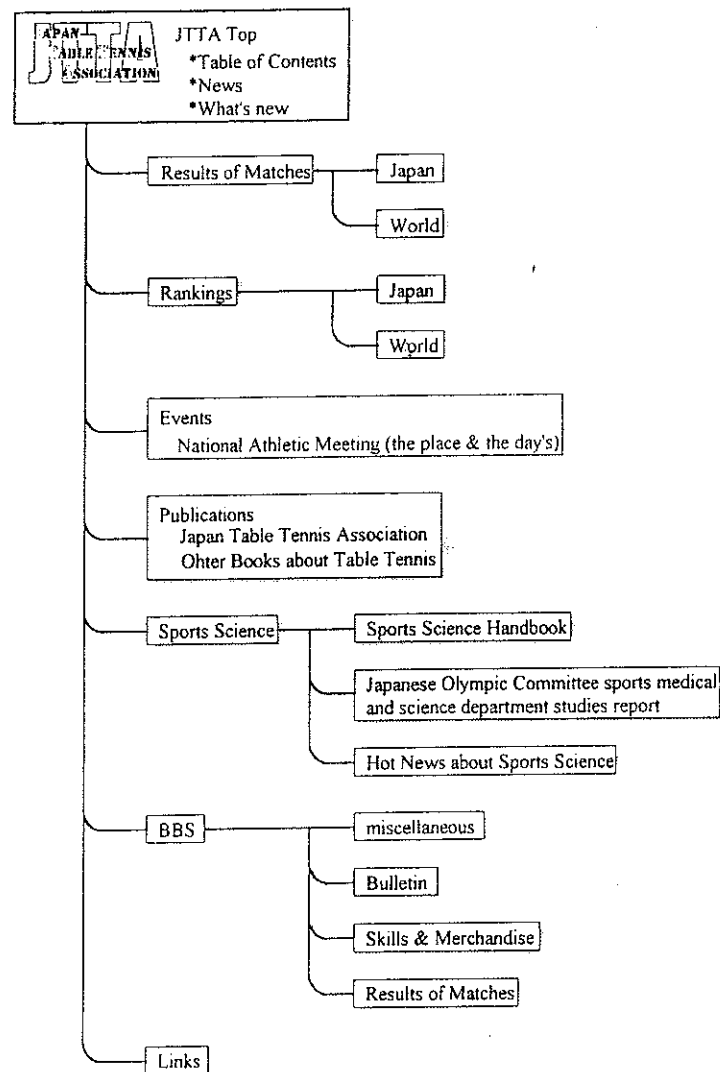


Figure 2. The contents of the JTJA web site. This figure shows contents and the pages of the site of the JTJA.

In addition to the above, a Real Time Communication System was temporarily provided for users in 2000 when major domestic table tennis competitions were held.

As sports science had been one of the cores of our project, the full coverage of both the *Sports Science Handbook* and the *Report of Sports Medicine and Science* published by the Japanese Olympic Committee are included in full at the site.

Furthermore, special emphasis was also placed on sending information promptly to users. To this end, the Real Time Communication System was developed and provided whenever major domestic championships were held. Via this system, all the match results could instantly be seen on the site. The details of this system are outlined below (see section 6).

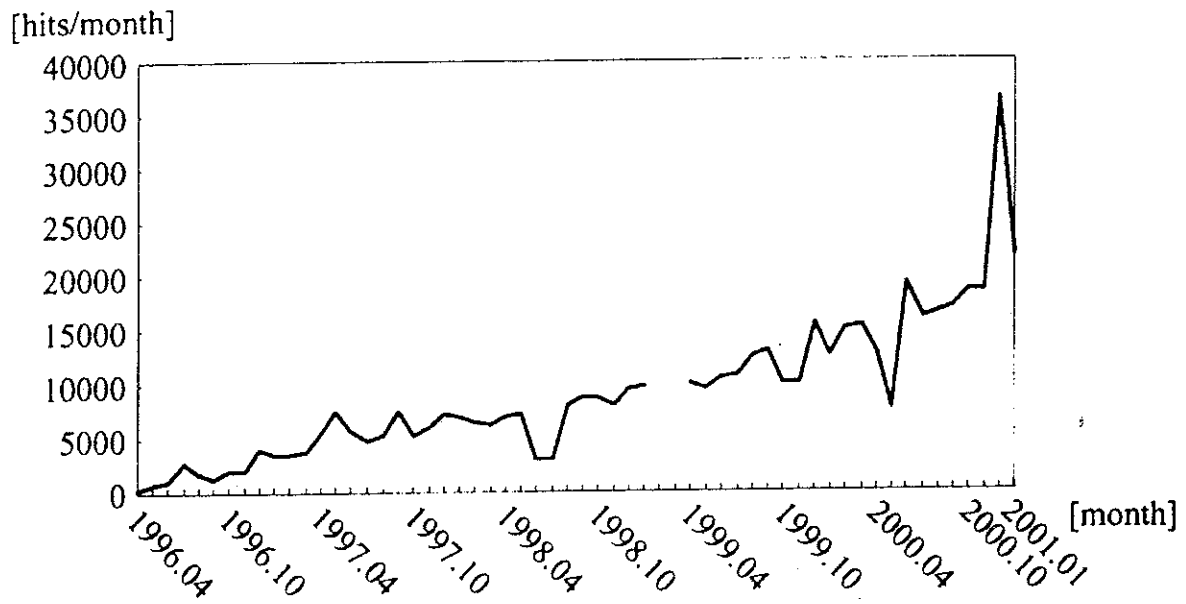


Figure 3. The change in the number of hits to the home page of the JTTA.

3 Changes in the number of hits

Since the web site was established in 1996, the number of hits to the monthly home page of the site showed a steady increase, as indicated in Figure 3. This correlates with the increase in use of digital technology as reported in a communications White Paper of the Ministry of Posts and Telecommunications. The peak in the number of hits in December 2000 was attributed to the 2000 National Table Tennis Championships. The number of hits was twice as high as the previous highest peak.

The change in the number of hits to the monthly home page can be seen in Figure 4. Before September 1998, there was a high number of hits to 'Results of Matches'; whereas access to the link pages ('Links') increased from October 1998 to August 2000.

A rapid increase in access to the 'Meeting Room', 'Results of Matches', and 'Rankings' pages was observed and this was thought to be due to an increased demand by users for information concerning participants in the 2000 National Table Tennis Championships.

Figure 5 shows the number of hits for each category. The categories varied in the number of pages they contained; however, the number of hits was totaled for individual categories, not individual pages. This showed that the number of hits to 'Meeting Room' was far greater than to other categories.

No data could be provided for February and March 1999, due to loss from our record.

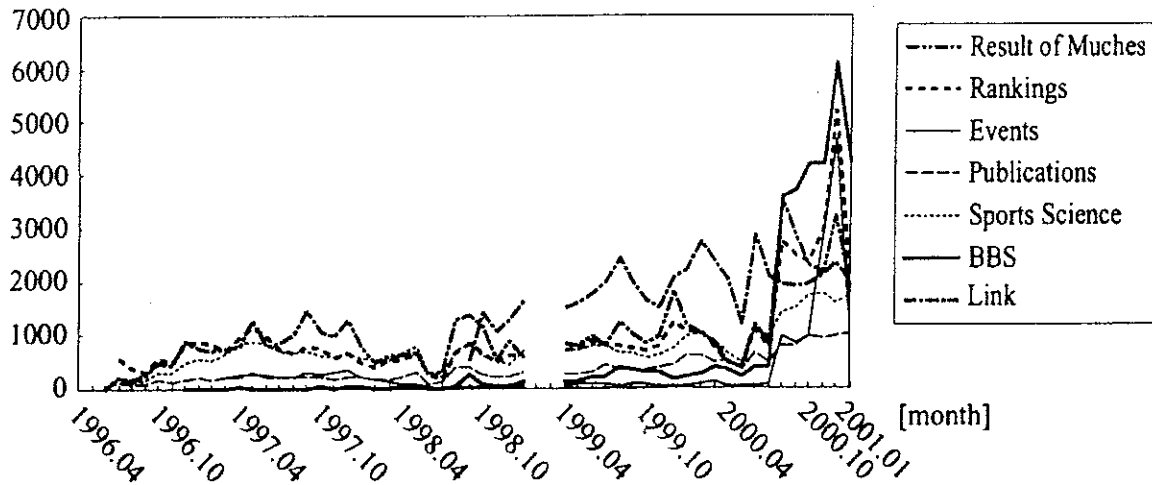


Figure 4. The change in the number of hits to the first page of each category

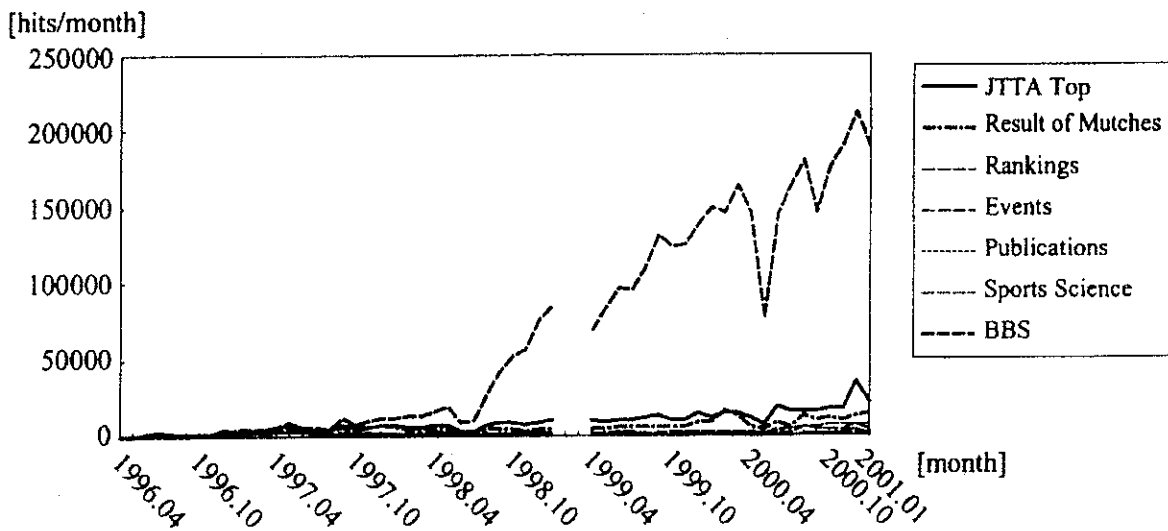


Figure 5. The change in the number of total hits for individual categories

4 'Meeting Room'

'Meeting Room', one of several categories on the site, was provided for collecting a diversity of views from users; anyone could write their opinion on the bulletin board. This was one distinctive feature of our site and was not seen on the web site of any other sports association. The 'Meeting Room' system was based on WebNEWS2.0j, (a model for the BBS system). This system was modified and was used as one of the categories on the present web site.

Initially, this category was not sub-divided; all kinds of opinions and

information from users were gathered together as 'Miscellaneous'. Owing to the diversity of user demands, however three sub-divisions were later created: 'Bulletin', 'Skills & Merchandising', and 'Results of Matches', in addition to 'Miscellaneous'. Thus, the category of 'Meeting Room', on the web site introduced in this paper, consisted of four sub-divisions. This appeared to improve utilization of this category.

As mentioned earlier, this web site (<http://www.jtta.ge.niigata-u.ac.jp>) was turned over to the new official site (<http://www.jtta.or.jp>) in June 2001. Because of the removal of this category from the new site, many e-mail requests for the restoration of the category were sent to the official site. Partly because of the large number of hits at the previous site and partly because of the many requests for restoration of the category, it could be assumed that the 'Meeting Room' system was the category of most practical use to visitors to the site.

5 'Sports Science'

While detailed scientific information was rarely seen on the sites of other sports associations, the Sports Science category on our site could adequately provide scientific knowledge regarding table tennis. This resulted in continued access from users. In this category, we offered the following material: the full version of the *Sports Science Handbook of the JTTA* edited by the Sports Medical Science Committee of the JTTA, *Issues and Reports on Table Tennis* edited by the Japan Olympic Committee, analyses of various topics, and short films, with commentary, of the highest-ranking table tennis players in the world. This category received favorable reviews. It not only gave up-to-date nationwide information but was also vital in terms of disseminating scientific knowledge and helpful for Japanese coaches and players to enhance their ability to compete internationally.

The Sports Medical Science Committee of the JTTA contributed greatly to the setting-up of this category.

6 The rapid communication system for the 2000 National Table Tennis Championships

This category was created at the request of Mr. Koji Kimura, the former Chief Director of the JTTA, and Mr. Yoshinori Yamamoto, the present Chief Press Officer of the JTTA. This system made a valuable contribution to the 2000 National Table Tennis Championships.

(1) The structure of the pages

The special feature of this category was that users were able to access the various pages concerning matches from the first page in this category (Figure 6). (As information was for domestic users in the main, it appeared predominantly in Japanese.) As shown in Figure 7, users could get the results of the matches by inputting the codes of the athletes or the matches. Alternatively inputting the athlete's name, affiliation, or the name of their prefecture could also get the

system to display detailed information on the screen, appropriate to that athlete (Figure 8). Furthermore, the system could display information about every tournament as shown in Figure 9.

In order to give users a sense of the atmosphere in the tournament hall, some photographs of matches and players voices were input. In addition, we included some comments on matches by Mr. Koji Kimura, the former Chief Director of the JTTA, each day.

平成 12 年度全日本卓球選手権大会結果速報

男子シングルス

OK NG

速報システムの使用方法

- 種目を選び、選手番号または試合番号を入力してください。(1バイト文字(いわゆる半角文字)で入力してください。)
- 試合番号は、ハイフン(-)で開始番号と終了番号を入力することができます。ただし、無効な番号を入力すると、入力がないものとみなします。(例 1601-1608)
- 種目と試合番号に矛盾がある場合、試合番号が優先されます。(例 男子シングルス・2101 → 女子シングルの試合番号 2101)
- 選手番号を入力すると、その選手の試合結果が表示されます。

その他のサービス

- 選手の検索を用意いたしました。文字列による検索がご利用になれます。

上位の結果

- 男子シングルス... [PDF 形式] [JPG 形式]
- 女子シングルス... [PDF 形式] [JPG 形式]
- 男子ダブルス... [PDF 形式] [JPG 形式]
- 女子ダブルス... [PDF 形式] [JPG 形式]
- 混合ダブルス... [PDF 形式] [JPG 形式]
- ジュニア男子... [PDF 形式] [JPG 形式]
- ジュニア女子... [PDF 形式] [JPG 形式]
- 大会ランキング

トーナメント表

種目	試合番号	PDF 形式 (10KB~20KB)				JPG 画像(90KB~130KB)			
		その1	その2	その3	その4	その1	その2	その3	その4
男子シングルス	1000	その1	その2	その3	その4	その1	その2	その3	その4
女子シングルス	2000	その1	その2	その3	その4	その1	その2	その3	その4

Figure 6. The first page of the rapid communication system for the 2000 National Table Tennis Championships (Japanese version)

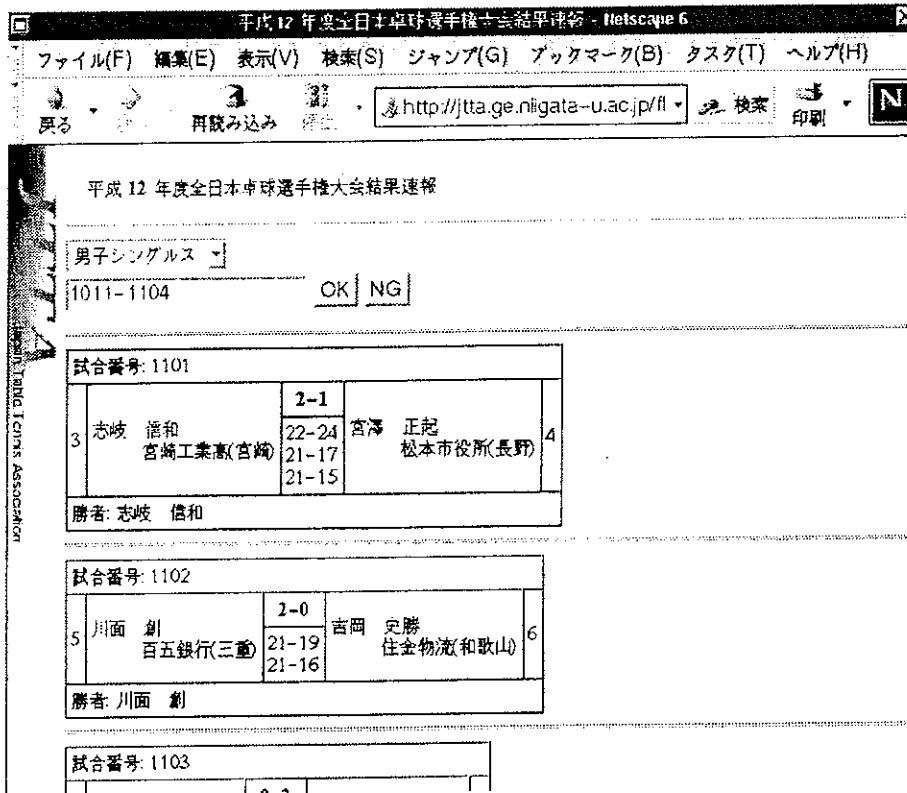


Figure 7. The example display by codes of players' prefecture.

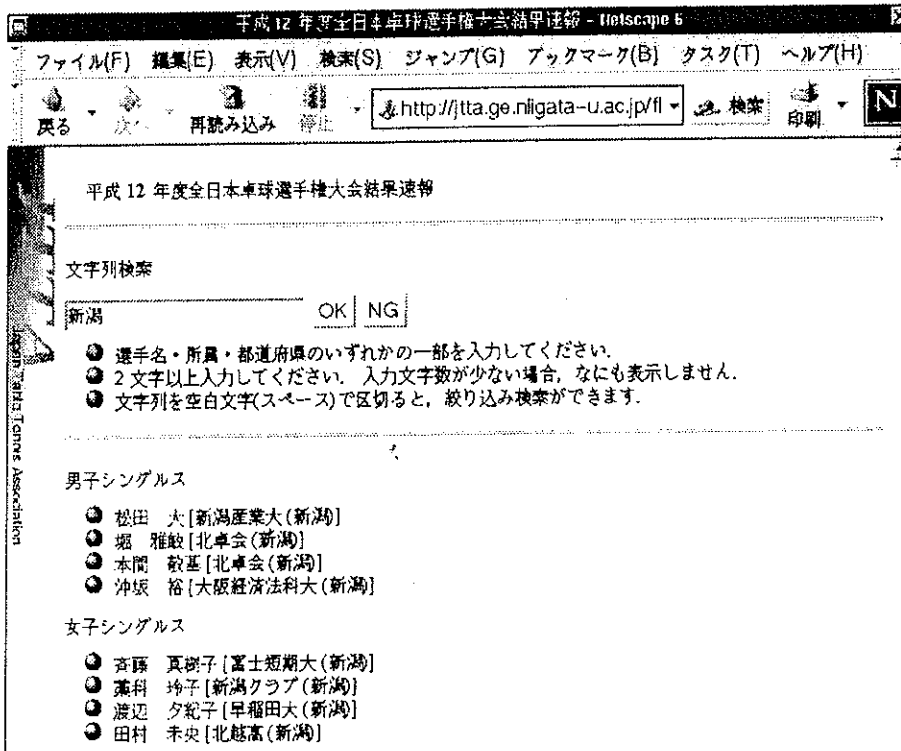


Figure 8. The Example display by codes of players' code, affiliation, & prefecture.

男子シングルス(その1)

1 渋谷 浩(日産自動・神奈)	1405	青山 振一(びわこ銀・滋賀)	30		
2 岸川 一星(車 川)	1201	1405	高森 英郎(行 茨城)	31	
3 志岐 信和(東山高・京都)	101	11	杉本 英明(筑波大・愛知)	32	
4 宮澤 正起(宮崎工業・宮崎)	1301	1305	原 隆史(トヨタ自・佐賀)	33	
5 川面 創(高 長野)	102	11	重政 和樹(動 車・山口)	34	
6 吉岡 史勝(松本市役・三重)	1202	1210	末貞 拓郎(福岡大・東京)	35	
7 高橋 浩史(所 和歌)			川崎 公介(さくら組・青森)	36	
8 郎 (百五銀行・山)	1501	1503	11	竹谷 康一(明治大・神奈)	37
9 今村 竜(住金物流・埼玉)	1203	1211	山口 輝雄(青森山田・川)	38	
10 深町 大吾(埼玉工業・香川)	104	11	木畑 久(高 長崎)	39	
11 伊藤 篤司(大 福岡)	1302	1306	政本 尚(日産自動・東京)	40	
12 菊地 琢也(近 畿大・愛知)	105	11	關野 康幸(車 奈良)	41	
13 門脇 宏幸(福岡大・宮城)	1204	1406	212	植本 正志(ひまわり・岐阜)	42
14 清水 広記(社若高・北海)			大野 智貴(生 命・兵庫)	43	
15 新井 周(東北福祉・道)	160	602	佐藤 建剛(大正大・熊本)	44	
16 大森 隆弘(大 学・山梨)	170		齊藤 清(三条栄・和歌)	45	
17 真田 浩二(JR北海道・大阪)	1204	407	井之上 善(天龍工業・山)	46	
18 見目 剛廣(中央大・東京)	108	11	紀 (滝川第二・埼玉)	47	
19 濱口 智司(グランブ・愛知)	1303	1307	白神 宏佑(高 校・東京)	48	
20 深谷 亮幸(リ 広島)	107	11	脇ノ谷 勝(ラララ・岡山)	49	
21 種本 忠(早稲田大・高知)	1206	1214	利 (和歌山銀・大阪)	50	
22 祝迫 洋平(愛知工業・福島)	1502	11	高居 悠介(行 群馬)	51	
23 渡辺 輝彦(大 石川)		1504	横井 修(埼玉工業・島根)	52	
24 高木和 健(原田鋼業・鹿児)	108	1215	河邊 孝彦(大 職員・静岡)	53	
25 一 (明治大・島)	1304	11	11	嶋 崇弘(専 修大・神奈)	54
26 川元 淳也(福 卓会・東京)	109	1308	原田 隆雅(関西高・川)	55	
27 松田 大(大 宗・青森)	1208	11	南 起完(近 畿大・京都)	56	
28 豊倉 裕基(日本大・愛媛)		404	216	大林 尚稔(日 大・東京)	57
29 太嶋 佑人(シチズン・新潟)			細井 耕平(サンクラ・北海)	58	
			岡本 多広(ブ 道)	59	

Figure 9. The example display of the tournament

(2) The structure of the hardware system

The structure of the hardware system for the Rapid Communication System is shown in Figure 10.

We installed an Integrated Services Digital Network (ISDN) router and two lap-top personal computers (PCs) in the competition hall. The match results, tournament schedule, and some photographs were entered into one of the PCs by two designated staff members. Edited pages of match results were entered into this Linux PC, and updated pages were successively placed onto a disk of the server using 'rsync'.

The other PC handled the editing of digital camera photographs, in Joint Photographic Experts Group format (JPEG), and Portable Document Format (PDF).

The Local Area Network (LAN) was connected to the ISDN router.

The latest information was provided to users by synchronizing the Linux PC and the web site of JTTA via File Transfer Protocol (FTP).

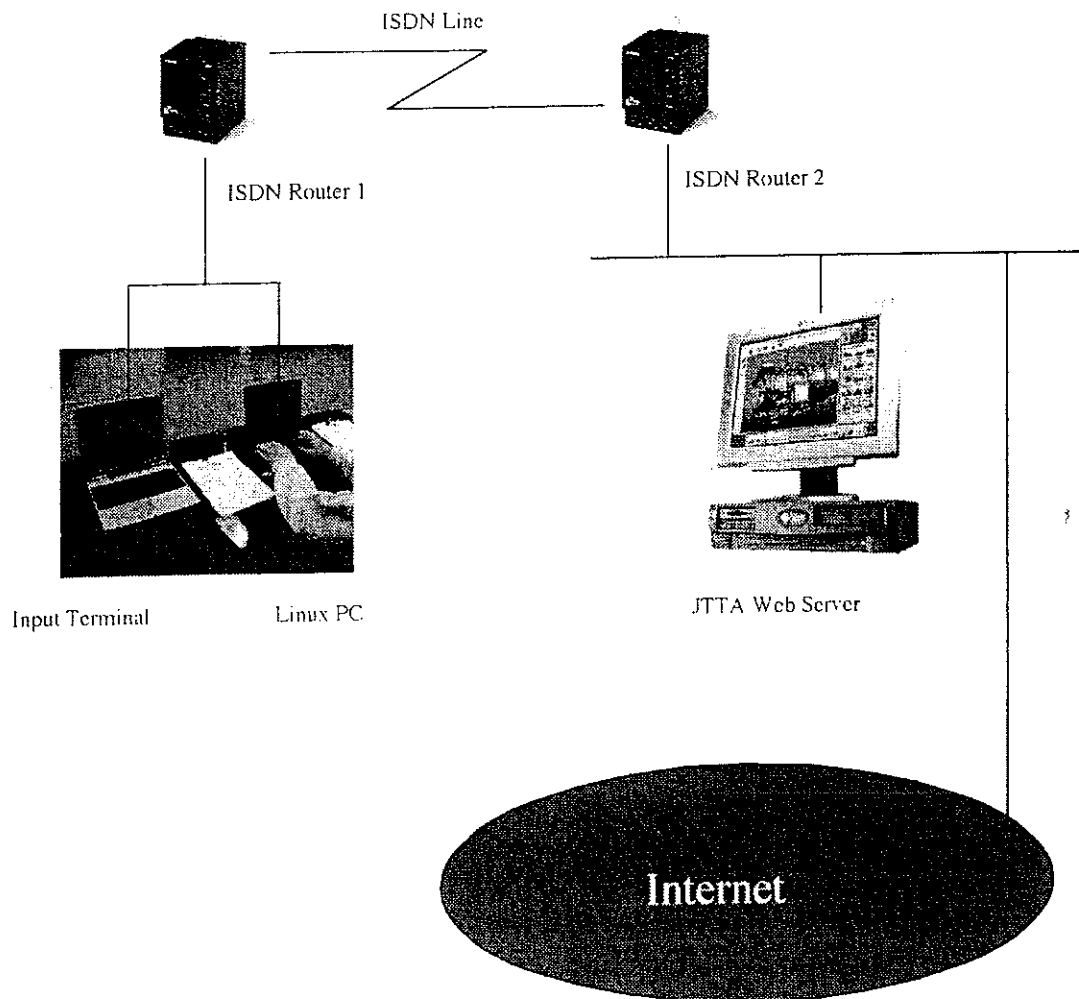


Figure 10. The structure of the hardware of the rapid communication system for the 2000 National Table Tennis Championships

(3) The structure of the software system

The program was written in Practical Extraction and Report Language4.0 (Perl4.0). The structure of this program is shown in Figure 11 by a flowchart of the Rapid Communication System main program.

If a user input the code of a match (or a range of codes), the results of the matches concerned would be displayed. Similarly, when the code of a player was entered, the results of all the matches involving that player would be displayed. Codes were used in this program as arguments, and the results could be displayed by the Uniform Resource Locator (URL), as shown below.

<http://jtta.ge.niigata-uac.jp/flash/index.cgi?1101>

As a result of inputting this match code, the computer would display the result of this match. By doing so, users were also able to link to the URL (Figure 12 'Results of Matches').

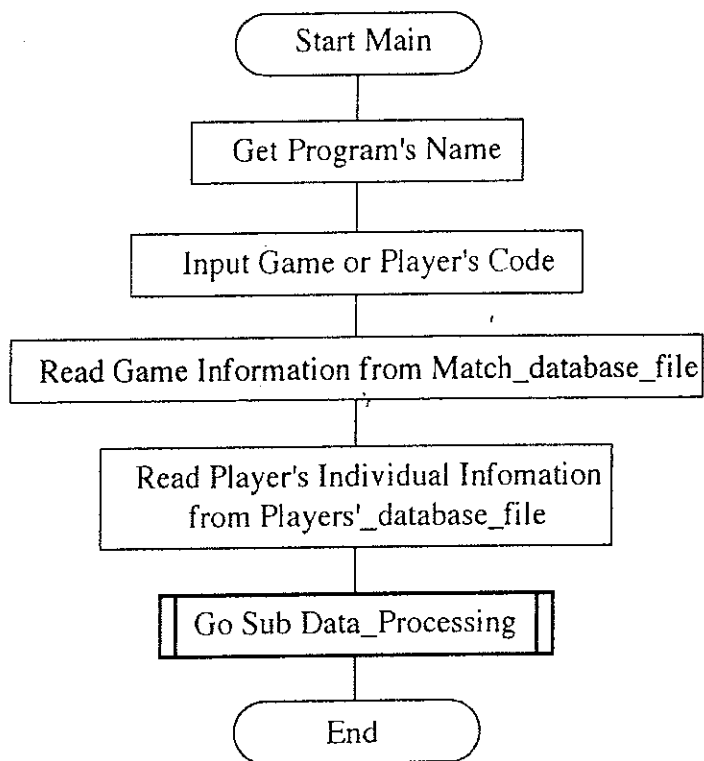


Figure 11. The flowchart of the main program for the rapid communication system.

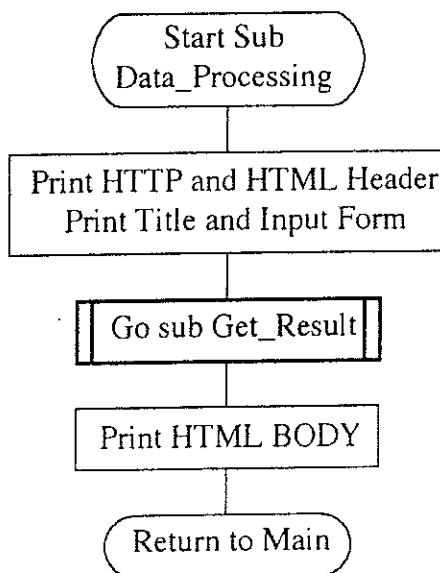


Figure 12. The flowchart of data processing and print HTML subroutine.

1) The Main Routine

This routine dealt not only with the analysis of arguments, but also with reading of the files of matches and players. This routine initiated the Data Processing routine.

The information retrieved from the files could be seen as global variables.

2) Data Processing

Data output was executed. The information output was as follows:

- a) HTTP header
- b) HTML header
- c) HTML text

Figure 7 shows output information as on the screen. The original input was shown at the top of the example display. Users were to input arguments; four figures for codes of matches, three figures or less for players.

When 'Results of Matches' had to be output, the Get Result routine would be executed.

3) Get Result Routine

Figure 13 shows the flowchart of the Get Result routine. When a code, as an argument, of a match or a player was input, the result of the match would be displayed on the screen. If an argument was for a certain player, the information given to users was the result of the players first match through to the player's last game. If an argument was for a certain match (or arguments for a certain range of matches), the relevant result or results of matches would be displayed on the screen.

For example, when the code of a player was input, the program would search the first match of the player in the matches' file, then, it would display the result of the match. The program followed the loop outlined below:

The routine would end when the player had been defeated.

The routine would continue to search for the next code of the match for the player in the matches' file, then display it.

If codes were input, and they designated a range of matches, the program would make a list of the matches within the range.

4) whoIs Routine

The whoIs Routine was the part of the program that enabled retrieval of information about 2 players. This was used because, after the first round, there would be a need to find out who had gone through, so that the draw for the matches in the next round could be known. This routine executed a search for the opponents for the next-round matches as shown in Figure 14. This part of the program took a code as an argument for the subroutine, and retrieved the winner of the match. The whoIs Routine eventually obtained the code of the next match by tracing the winner of each previous match.

7 Conclusions

(1) The web site in the present study met users' expectation. Due to the increasing popularity of the Internet, the number of hits to the site increased year on year. Additionally, the site facilitated the exchange of information with other

countries.

(2) In particular, the categories of 'Meeting Room' and 'Sports Science' were effective and were either distinctive to our site, or were rarely to be seen on the sites of other sports associations in Japan. The contents of each of the categories were interesting enough to result in a large number of hits.

(3) Even though there were a very large number of hits from people accessing the 'Rapid Communication System' page, the site was able to deal with this volume. In addition, the site was proven to be effective in offering both accurate information and speedy service.

8 Acknowledgements

The initial impetus behind this paper came from working on a joint project. The authors would like to give their thanks for the many suggestions they received from a number of people including Mr. Kohji Kimura, a former Chief Director of the JTTA, and Mr. Yoshinori Yamamoto, the Chief Press Officer of the JTTA. The authors are grateful to Mr. Ichiro Ogimura for the original idea of the Rapid Communication System, which made this system a reality. Also, the authors would like to thank Mr. Nobuo. Yuza a member of the Sports Committee of the JTTA for his substantial cooperation. The support of the JTTA Secretariat including Mr. Kenji Suga, and Mr. Ritsuto Iseki was an essential factor in the realization of this paper.

The authors are grateful to Mrs. Ayumi Takahashi, an adjunct lecturer at Niigata University, for her time in reviewing this manuscript. In addition, we owe a debt to Mr. David Arnett for proofreading this document.

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