CHAPTER 5

SYSTEM EVALUATION

"As a human being, one has been endowed with just enough intelligence to be able to see clearly how utterly inadequate that intelligence is when confronted with what exists"

Albert Einstein

5.0 System Evaluation

5.1 Introduction

In order for the developed system to successfully achieve the goals, it must be accepted and utilized by the user. Evaluation of user acceptance is important and therefore, it is useful to know if users are satisfied with the developed system.

An effective approach to system evaluation is bound to reduce the uncertainties associated with its implementation success. Without an effective evaluation scheme, there is no clear basis for developers to learn from past experience to improve system development procedures. This assessment would contribute to a possible enhancement of the system. This chapter is an attempt at filling such a need.

5.2 Evaluation Methodology

Evaluation is an assessment of quality which, in turn, is a composite of attributes that bear on a system's ability to satisfy needs which is stated in the ISO standard 9000 [Sharma, 1993].

The system that was developed was assessed by a combination of physicians, administrative staff (i.e. nurses) and general users. It was hoped, by this way, the system is evaluated by considering its usefulness to the administrative staff as well as the general users.

Observation-based evaluation was carried out whereby it simply involves watching users as they use the system, looking at the facilities used, the errors made,

and etc. Furthermore, how they understand the system and how they were trying to use the system to accomplish their objectives could also be noted. Evaluation forms were distributed to the respective evaluators after they have used the system.

Two survey forms were designed to gather information and to draw conclusions based on the responses of the evaluators. The MediX Evaluation form was designed specifically for the overall system evaluation. Meanwhile, the User Feedback form was designed for the user's section of the system only (i.e. a user is not allowed to access the administration section of the system). It was hoped that by performing the evaluation on the system, a better system would emerge from it and the objectives of the project could be achieved.

5.3 Form Design

Two survey forms were designed for the evaluation of the system. These include the MediX Evaluation and the User Feedback forms. The MediX Evaluation form was designed specifically for the administrators to perform the system evaluation. Meanwhile, the User Feedback form was designed for the general users to evaluate the user's section. Table 5.1 summarizes the title and the purpose of the two evaluation forms.

Table 5.1 : Title and Purpose of the Two Evaluation Forms

Title	Purpose
MediX Evaluation Form (Administrator)	To ensure that the development of the system meets the criteria and objectives of the administrators
User Feedback Form (User)	To get a feedback from the general users pertaining to the system

Three types of formats were used to prepare the questions on the two sets of the survey forms. They include the close-ended, open-ended and partially open-ended types. Close-ended format are those that took the form of a multiple-choice question while the open format questions are those that ask for unprompted opinions from the evaluators. In other words, there are no predetermined sets of responses, and the participant is free to answer however he/she chooses in the open format. The comment area helps the users to accept the survey better by allowing them to express themselves beyond mere numbers, and in addition often provides more insight into specific problems than do the factor scores alone [Hartrum et al., 1989]. However, very few open format questions were prepared as the open format requires more thought and time on the part of the respondent and the chance of boredom may increase if more questions were to be asked. The close-ended questions were prepared more compared to the open-ended as the close-ended types were easy for the evaluators to give answers. Partially open-ended questions were those that consists of open-ended as well as close-ended types.

The MediX Evaluation Form (Administrator) comprises of seven sections. The aim of each section is to determine the various aspects in the developed system. The seven sections have a total of thirty-one questions. Of these, 26 are close-ended, 3 are open-ended and 2 are partially open-ended type of questions. These thirty-one questions were prepared and designed after the development of the system. This form was distributed to the administrators for evaluation of the final development of MediX. The main purpose was to ensure that the developed system met the criteria and objectives of the administrators. Table 5.2 presents the section titles, the question

types and the total number of questions for the MediX Evaluation Form (Administrator).

Table 5.2 : Section Titles, Question Types and the Total Number of Questions for the MediX Evaluation Form (Administrator)

Sect.	Title	Question Type			Num. of Questions
		Close-Ended	Open-Ended	Partially Open-Ended	
A	General	3	-	-	3
B	Messages	2	-	2	4
C	Functions/Modules	7	-	-	7
D	Statistical Package	6	-	-	6
E	User Interface	4	-	-	4
F	Overall Aspects	4	-	-	4
G	Comments/ Recommendations	-	3	-	3
	Total	26	3	2	31

Keys :- Sect. : Section, Num. : Number.

The second set of the survey form is the User Feedback Form. It has two sections with fourteen questions that were written in simple language. Of the fourteen questions, 11 are close-ended and 3 are open-ended type of questions. This form was distributed to nine people comprising of two physicians and seven general users to gather feedback of the User's Section of the system. Table 5.3 shows the section titles, the question types and the total number of questions for the User Feedback Form.

Table 5.3 : Section Titles, Question Types and the Total Number of Questions for the User Feedback Form

Sect.	Title	Question Type		Num. of Questions
		Close-Ended	Open-Ended	
A	General	11	-	11
B	Comments/ Recommendations	-	3	3
	Total	11	3	14

Keys :- Sect. : Section, Num. : Number.

Similarly, as it was discussed in chapter 3, several guidelines were also considered when writing the questions. They include choice of words, clarity, consistency, similar questions grouped together, and adequate space provided for responses. The two sets of evaluation forms are included in Appendix B of this report.

5.4 Pilot Test

A pilot test was carried out on representatives of the target audience to review the MediX Evaluation Form (Administrator) and the User Feedback Form. This is to ensure that the questions prepared were free from mistakes. A total of five representatives were selected for the two sets of the evaluation forms. They comprised of one physician from a government hospital, one nurse cum administrative staff from a private clinic and three students from the university, respectively.

The distributed forms were reviewed with the representatives and a discussion was held with them. Revisions to the initial design of the evaluation forms were made based on their review. This is to ensure that the questions designed are understandable and in no way confusing the actual participants.

5.5 Administration and Processing of Evaluation Forms

The MediX Evaluation Forms (Administrator) were distributed to two physicians, one nurse cum administrative staff and one general user. Before the evaluation forms were distributed to the respective participants, they were given

verbal instructions about the system and the questions in the form. All of them evaluated the MediX system and answered all the questions at that time. The evaluation exercise took forty-five minutes. Any incomplete evaluation forms were returned back (on the spot) to the respective participant for further completion. Meanwhile, the User Feedback Forms were distributed to two physicians and seven general users. They, too, evaluated the system and answered the questions on the forms.

In order to give a broader scope on which to make judgements, all of the evaluators were not informed of the others' responses. This was to reduce the so-called "halo-effect" [Richards et al., 1992]. Thus, this reduces the bias of what the informant responses think the developer wants to hear or what they think the correct answer should be [Anthony, 1999].

Each of the questions was rated and analyzed using Microsoft Excel 97, which will be discussed, in the following section.

5.6 Analysis of Survey Outcomes

The objective of this section is to provide an example of how the results can be used and the types of information that can be deduced. The analyses for each form are presented in the following sections. All data analysis was performed using the Microsoft Excel 97 running under the Windows 95 OS.

5.6.1 MediX Evaluation Form (Administrator)

This form was designed and prepared after the development of the system. It evaluates the system from the perspective of administrators. All of the questions prepared were directly related to the administration section of the MediX system. The evaluators were two physicians, one nurse cum administrative staff and one general user. A total of 4 people evaluated the system.

Section A : General

This section consists of three general questions, which are of close-ended types. Table 5.4 presents the detailed responses from 4 evaluators of the MediX Evaluation Form.

Table 5.4 : Responses from 4 Individual Evaluators for the Section A in the MediX Evaluation Form

Q.	Description	Responses from 4 Evaluators			
		E1	E2	E3	E4
1.	System is easy to be understood without the User Manual	Easy	Easy	Moderate	Easy
2.	Fulfilled the initial requirements	Yes	Yes	Yes	Yes
3.	Satisfied with the development objectives	Yes	Yes	Yes	Yes

Keys :- Q. : Question, E1 : Nurse cum administrative staff, E2 : Physician, E3 : Physician, E4 : General user.

From the table 5.4, it can be concluded that 75.0% of the evaluators agreed that the system was understandable and easy, hence, user manuals were not required for them. Only one evaluator (i.e. physician) found it to be of moderate. All of the evaluators indicated that the system has fulfilled the initial requirements as well as the development objectives.

Section B : Messages

The aim of this section is to determine the understandability of the error messages that pop-up. It is also to identify any incorrect messages or runtime errors during the operation of the system. Table 5.5 shows the responses of section B.

Table 5.5 : Responses from 4 Individual Evaluators for the Section B in the MediX Evaluation Form

Q.	Description	Responses from 4 Evaluators			
		E1	E2	E3	E4
1.	Are the messages helpful?	Helpful	Helpful	Moderate	Moderate
2.	Are the messages understandable?	Yes	Yes	Yes	Yes
3.	Was there any incorrect message found during the operation of the system?	Yes *3 messages*	Yes *1 message*	Yes *1 message*	No
4.	Has any runtime error been detected during the operation	No	No	No	No

Keys :- Q. : Question, E1 : Nurse cum administrative staff, E2 : Physician, E3 : Physician, E4 : General user.

The outcome shows that 2 evaluators (50%) have found the messages to be helpful while the remaining evaluators indicated the error messages were of some help. However, all the 4 evaluators agreed that the error messages were understandable when errors were made during the operation. As the first evaluator was more alert, three incorrect messages were found during the operation of the system. Two other evaluators only spotted one incorrect message. Meanwhile, the general user did not spot any incorrect message, as he was not aware of the term used in the message box. During the operation of the system, all four evaluators did not detect any run time error.

Section C : Functions/Modules

The purpose of this section is to determine the logical of the functions or modules in the MediX system. Thereby, this section consists of close-ended types with a Yes, No and No Comment answers. The table below shows the overall responses from 4 evaluators for section C.

Table 5.6 : Overall Responses from 4 Evaluators in Percentage for the Section C in the MediX Evaluation Form

Q.	Description	Overall Responses from 4 Evaluators (%)		
		Yes	No	No Comment
1.	Forms are logically integrated	100	0	0
2.	Functions/Modules (e.g. add/modify/ delete) are logically integrated	100	0	0
3.	Record is easy to be added, modified and deleted in the database	100	0	0
4.	Reporting function is helpful in the daily work	100	0	0
5.	When a report is printed, correct results are displayed	100	0	0
6.	Chart/Graph module is necessary	100	0	0
7.	Security feature is undertaken in the system (e.g. password)	100	0	0

Key :- Q : Question.

The results show that all of the 4 evaluators; 2 physicians, 1 nurse cum administrative staff and 1 general user have agreed that section C is free from problems. As shown in the table above, all of them are satisfied with the basic functions integrated in the MediX system.

Section D : Statistical Package

This section only deals at the analysis module. The aim is to identify the statistical aspects as well as ease of use and usefulness of the package integrated in the system. The following results were obtained from the evaluators.

Table 5.7 : Overall Responses from 4 Evaluators in Percentage for the Section D in the MediX Evaluation Form

Q.	Description	Overall Responses from 4 Evaluators (%)		
		Yes	No	No Comment
1.	When the analysis button is clicked, Stata is displayed	100	0	0
2.	The basic analysis can be done on the medical expertise (e.g. one way frequency, two-way cross tabulation and etc.)	75.0	25.0	0
3.	All the necessary statistical analysis can be performed for the time being	50.0	50.0	0
4.	Stata is easy to use	25.0	75.0	0
5.	Need training in Stata	25.0	75.0	0
6.	It is good to have a statistical package incorporated with the system	100	0	0

Key :- Q. : Question.

3 (75.0%) out of the 4 evaluators have indicated that the *basic* analysis (e.g. one way frequency, two-way cross tabulation and etc.) can be performed on the medical expertise. Meanwhile, 50.0% of the evaluators indicated that the *necessary* statistical analysis could be performed for the time being. The remaining of the evaluators indicated otherwise. This may be due to the limited analysis that one can perform. Currently, display of analysis in the form of pie charts is not available. However, the display of pie charts is integrated in the report module but not in the analysis module.

Only the nurse cum administrative staff found the statistical package (incorporated together) easy to use as she has had previous knowledge on analyzing data. The general user and two physicians (75.0%) found the statistical package difficult to use, as the three of them had no prior knowledge in analyzing data by using a statistical package. It can be concluded that users who have had some knowledge in statistics can use the statistical package incorporated in the system without much difficulty for the first time. Of the 4 evaluators, three (75.0%) of them have indicated that they need training in using the statistical package.

In short, all of the evaluators agreed that it is good to have a statistical package incorporated in the MediX system.

Fig. 5.1 : Feedback on the Ease of Use of The Statistical Package

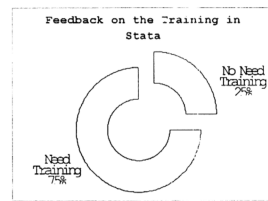


Fig. 5.2 : Feedback on the Training in Stata

Section E : User Interface

This section mainly investigates the user interfaces of the MediX system. These include the fonts, command buttons, text boxes and etc. The table below shows the responses of the 4 evaluators.

Table 5.8 : Overall Responses from 4 Evaluators in Percentage for the Section E in the MediX Evaluation Form

Q.	Description	Overall Responses from 4 Evaluators (%)		
		Yes	No	No Comment
1.	Is the screen overcrowded with command buttons and text boxes?	0	100	0
2.	Are the fonts used viewable and at appropriate sizes?	100	0	0
3.	Are the colours used for all of the screens appropriate?	75	25	0

Key :- Q. : Question.

All four evaluators have indicated that the screens in MediX were not overcrowded with command buttons and text boxes. Furthermore, they indicated that the fonts used in the interfaces were viewable and at appropriate sizes.

The results also show that 3 evaluators (75%) have agreed that the colours used for all of the screens were appropriate. However, one evaluator (i.e. the general user) did not think so.

Based on the responses from the 4 evaluators, the nurse cum administrative staff and one physician (50%) found the user interface of the MediX system to be of very good. Another physician and a general user found it to be of good and average, respectively. The rating of the user interface is shown in table 5.9 and is also represented graphically in fig. 5.3.

Table 5.9 : Ratings on the User Interface of the MediX Administration Section

Rating	Responses from 4 Evaluators (%)
Excellent	-
Very Good	50.0 (2)
Good	25.0 (1)
Average	25.0 (1)
Poor	-
Very Poor	-

Key :- ( ) : Number of Evaluators

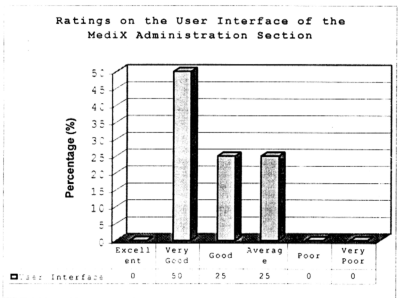


Fig. 5.3 : Ratings on the User Interface of the MediX Administration Section

Section F : Overall Aspects

This section investigates the overall aspects of the MediX system. It includes the ease of use, satisfaction, and usefulness to the medical community as well as to the general population.

From the tables below, it can be concluded that 3 evaluators (75%) and one evaluator (25%) have found MediX to be easy and moderate to use, respectively. Only 2 evaluators (50%) were satisfied with the development of MediX. The

remaining evaluators were moderately satisfied. More than 70% of the evaluators indicated that the MediX is indeed a useful system for the medical community as well as for the general population. Hence, it can be concluded that the developed system, MediX is well accepted by the evaluators. Tables 5.10, 5.11, 5.12 and 5.13 show the ratings of the overall aspects followed by the representations of graphical figures.

Table 5.10 : Ratings on the Ease of Use of MediX by Administrators

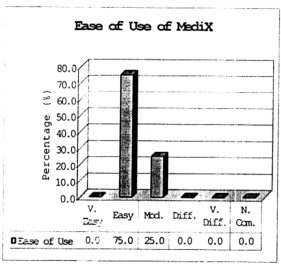
Rating	Responses from 4 Evaluators (%)
Very Easy	-
Easy	75.0 (3)
Moderate	25.0 (1)
Difficult	-
Very Difficult	-
No Comment	-

Key :- ( ) : Number of Evaluators

Table 5.11 : Ratings on the Satisfaction of MediX by Administrators

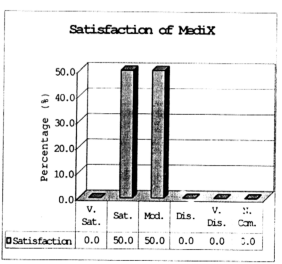
Rating	Responses from 4 Evaluators (%)
Very Satisfied	-
Satisfied	50.0 (2)
Moderate	50.0 (2)
Dissatisfied	-
Very Dissatisfied	-
No Comment	-

Key :- ( ) : Number of Evaluators



Keys :- V. Easy : Very Easy, Mod. : Moderate, Diff. : Difficult, V. Diff. : Very Difficult N. Com. : No Comment

Fig. 5.4 : Ratings on the Ease of Use of MediX by Administrators



Keys :- V. Sat. : Very Satisfied, Sat : Satisfied, Mod. : Moderate, Dis. : Dissatisfied, V. Dis. : Very Dissatisfied, N. Com. : No Comment

Fig. 5.5 : Ratings on the Satisfaction of MediX by Administrators

Table 5.12: Ratings on the Usefulness of MediX for the Medical Community by Administrators

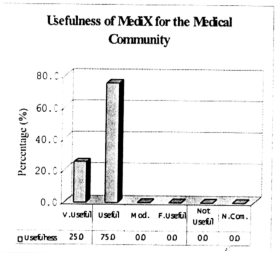
Rating	Responses from 4 Evaluators (%)
Very Useful	25.0 (1)
Useful	75.0 (3)
Moderate	-
Fairly Useful	-
Not Useful	-
No Comment	-

Key :- ( ) : Number of Evaluators

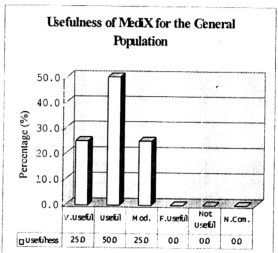
Table 5.13: Ratings on the Usefulness of MediX for the General Population by Administrators

Rating	Responses from 4 Evaluators (%)
Very Useful	25.0 (1)
Useful	50.0 (3)
Moderate	25.0 (1)
Fairly Useful	-
Not Useful	-
No Comment	-

Key :- ( ) : Number of Evaluators



Keys :- V. Useful : Very Useful, Mod. : Moderate, F. Useful : Fairly Useful, N.Com. : No Comment



Keys :- V. Useful : Very Useful, Mod. : Moderate, F. Useful : Fairly Useful, N.Com. : No Comment

Fig. 5.6 : Ratings on the Usefulness of MediX for the Medical Community by Administrators

Fig. 5.7 : Ratings on the Usefulness of MediX for the General Population by Administrators

Section G : Comments/Recommendations

Improved job efficiency as well as cost and time savings were among the primary benefits of the MediX system which were mentioned by all of the four

evaluators. More than 70% of the evaluators indicated that the statistical package incorporated was indeed very useful.

The primary drawback that can be gathered from the evaluators was the lack of familiarity in Stata. However, this can be resolved if sufficient training was given to the respective users. Some of the evaluators had suggested that more security measures should be undertaken to safeguard the integrity of the data in the database. This recommendation will be taken into consideration for future enhancements.

Thus, it can be concluded that the system was well accepted by the evaluators apart from the needed modifications.

5.6.2 User Feedback Form

The User Feedback Form was prepared and designed after the development of the system, too. This form is specifically designed for the user's section of MediX. It evaluates the system from the perspective of general users. The feedback forms were distributed to 9 evaluators comprising of 2 physicians and 7 general users.

Table 5.14 : The 9 Users for the User Feedback Forms

	Users	Age (in years)	Computer Literacy
U1	Physician	30	Skilled
U2	Physician	45	Novice
U3	General User	15	Skilled
U4	General User	20	Naïve
U5	General User	22	Novice
U6	General User	25	Expert
U7	General User	36	Novice
U8	General User	41	Novice
U9	General User	52	Naïve

Keys :- U1, U2, ..., U9 : User1, User2, ..., User9.

The table above shows the description of the evaluators for the User Feedback Forms. All of the evaluators are categorized as naïve, novice, skilled and expert (i.e. in that order) in the computer literacy column. As shown in the table, the evaluators were chosen from different age groups. This is to ensure that the responses got would reflect the general population as a whole.

Section A : General

The purpose of this section is to elicit the responses from the general users pertaining to the MediX User section. Table 5.14 below shows the responses for section A of the User Feedback Form from four categories of computer literacy among the general users and physicians.

Table 5.15 : Responses from 9 Users for the Section A in the User Feedback Form

Description	Classification of Users (9)								Total
	Naïve (2)		Novice (4)		Skilled (2)		Expert (1)		
	Y	N	Y	N	Y	N	Y	N	
Is the screen overcrowded with command buttons and text boxes?	0	22.2	0	44.5	0	22.2	0	11.1	100
Are the fonts used viewable and at appropriate sizes?	22.2	0	44.5	0	22.2	0	11.1	0	100
Are the colours used for the screen appropriate?	11.1	11.1	33.4	11.1	22.2	0	11.1	0	100
If errors are made during the operation, are the messages helpful?	11.1	11.1	33.4	11.1	22.2	0	11.1	0	100
Is MediX easy to use?	11.1	11.1	44.5	0	22.2	0	11.1	0	100
Is MediX a useful system for the general population?	22.2	0	44.5	0	22.2	0	11.1	0	100

Keys :- ( ) : Number of Users, Y : Yes, N : No.

The following conclusions were made based from the table 5.14.

The 1 expert, 2 skilled, 4 novice and 2 naïve users have unanimously agreed that the screens were not overcrowded with command buttons and text boxes. Moreover, the fonts used were viewable and at appropriate sizes.

7 of the users (77.8%) have indicated that the colours used for the screen were appropriate. However, 2 (22.2%) users (i.e. 1 naïve and 1 novice user) did not think so. More than 75.0% of the users agreed that the error messages appeared during the operation (e.g. did not input the required data in the text box and etc.) were helpful as the messages directed them to amend the errors. From this, it can be concluded that all categories of users have found the messages helpful when accidental errors were made.

From the survey, 88.9% of the users have agreed that the MediX system was easy to use. Therefore, the objective of the system development has been met as part of the system was meant for the general population. On the usefulness of the system, all of the users (i.e. the two physicians and seven general users) do think that MediX is a useful system for the general population. They hope that by having such a system, the general population will be more informed on the medical specialists that are available.

Apart from the questions above, the ratings on the MediX User section was also performed. They include the ability to identify the desired medical expertise, the ease of use of the search function, the usefulness, satisfaction and the overall impression of the MediX system. The tables below show the ratings of the MediX as mentioned above.

Table 5.16 : Ratings on the Ability to Identify the Medical Expertise

Rating	Responses from 9 Users (%)
Excellent	44.4 (4)
Good	55.6 (5)
Poor	-
No Comment	-

Key :- ( ) : Number of Users

Table 5.17 : Ratings on the Ease of Use of the Search Function

Rating	Responses from 9 Users (%)
Excellent	55.6 (5)
Good	44.4 (4)
Poor	-
No Comment	-

Key :- ( ) : Number of Users

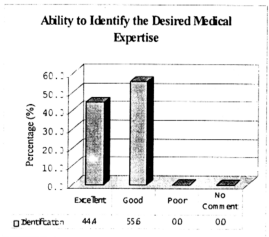


Fig. 5.8 : Ratings on the Ability to Identify the Desired Medical Expertise

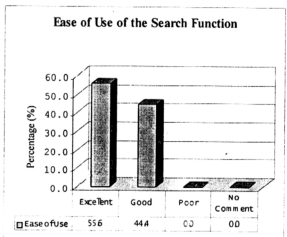


Fig. 5.9 : Ratings on the Ease of Use of the Search Function

Table 5.18 : Ratings on the Usefulness of MediX by Users

Rating	Responses from 9 Users (%)
Very Useful	77.8 (7)
Useful	22.2 (2)
Moderate	-
Not Useful	-

Key :- ( ) : Number of Users

Table 5.19 : Ratings on the Satisfaction of MediX by Users

Rating	Responses from 4 Users (%)
Very Satisfied	55.6 (5)
Satisfied	33.3 (3)
Moderate	11.1 (1)
Dissatisfied	-

Key :- ( ) : Number of Users

Table 5.16 : Ratings on the Ability to Identify the Medical Expertise

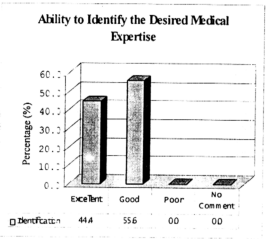
Rating	Responses from 9 Users (%)
Excellent	44.4 (4)
Good	55.6 (5)
Poor	-
No Comment	-

Key :- ( ) : Number of Users

Table 5.17 : Ratings on the Ease of Use of the Search Function

Rating	Responses from 9 Users (%)
Excellent	55.6 (5)
Good	44.4 (4)
Poor	-
No Comment	-

Key :- ( ) : Number of Users



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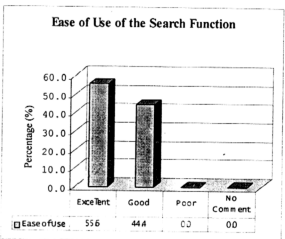

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Rating	Responses from 9 Users (%)
Very Useful	77.8 (7)
Useful	22.2 (2)
Moderate	-
Not Useful	-

Key :- ( ) : Number of Users

Table 5.19 : Ratings on the Satisfaction of MediX by Users

Rating	Responses from 4 Users (%)
Very Satisfied	55.6 (5)
Satisfied	33.3 (3)
Moderate	11.1 (1)
Dissatisfied	-

Key :- ( ) : Number of Users

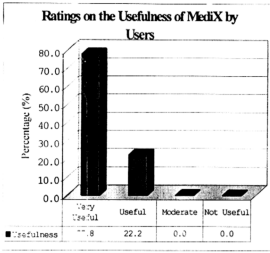

Fig. 5.10 : Ratings on the Usefulness of MediX by Users

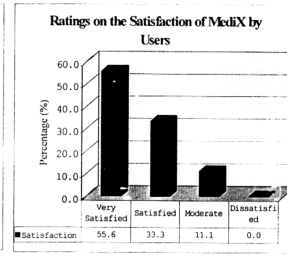

Fig. 5.11 : Ratings on the Satisfaction of MediX by Users

Table 5.20 : Overall Impression of MediX by Users

Impression	Responses from 9 Users (%)
Positive	77.8 (7)
Neutral	22.2 (2)
Negative	-

Key :- ( ) : Number of Users

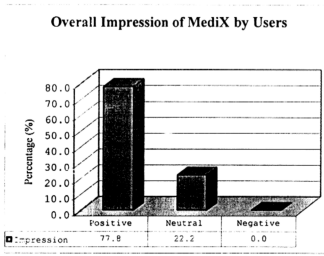

Fig. 5.12 : Overall Impression of MediX by Users

Of the 9 users, 4 of them (44.4%) indicated that the ability to find the desired medical expertise was excellent, while the remaining found it to be good. 5 users (55.6%) indicated that the ease of use of the search function was excellent. 77.8% and 22.2% of users rated MediX to be of a very useful and useful system, respectively. Meanwhile, 5 users were very satisfied with what the system has to offer. However, 4 other users hoped that the system would be enhanced in future with more information on the medical expertise such as the expertise's age, consultation fees and other relevant details.

In short, more than 75% of the users gave a positive overall impression of the MediX system.

Section B : Comments/Recommendation

Immediate retrieval of information on the desired medical expertise as well as cost and time savings (in terms of travelling) were among the primary benefits of the MediX system which were mentioned by most of the users. However, the primary limitation that can be gathered from the users was the lack of information pertaining to the respective medical expertise. All of them had requested that more details of the medical expertise to be included such as the age, consultation fees, number of operations performed and etc.

Four of the users indicated that they would prefer if the system was a web-based (currently, it is a client/server-based system). Overall, the users hoped that this system would serve the intended purpose.

5.7 Evaluation Aspects on Maintenance

Questions pertaining to the aspects on maintenance were not included in the forms that were designed for the evaluation process. Evaluation on the maintenance activities such as backups, training aids and training classes, system availability, operator documentation, upgrading of the system and etc. could not be performed due to time constraint.

5.8 Summary

The prototype system has shown the feasibility of an application to support the process of keeping track of medical expertise. The administrative staff, physicians and the general users involved showed considerable enthusiasm when the system was demonstrated to them, indicating the demand for such a system. The system shows the potential for providing a more extensive and up-to-date information than existing paper-based systems.

The results of system evaluation gave evidence about the consequences of architectural decisions and, thus, support the correctness and the optimization of the system design without expensive synthesis or analysis iterations. Moreover, the actual system behaviour and the identification of system weak points and bottlenecks that are possible places for architectural evolutions are noted and taken into consideration for future enhancements.

From the system evaluation, it can be concluded that MediX is well accepted by the administrative staff, physicians and the general users.