

## PAPER DETAILS

TITLE: How Istanbul HSBC Bank Operators Use Lotus Notes Within Electronic Performance Support Systems

AUTHORS: Servet BAYRAM

PAGES: 32-45

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/156402>

## How Istanbul HSBC Bank Operators Use Lotus Notes within Electronic Performance Support Systems

Prof. Dr. Servet BAYRAM

Computer Education & Instructional Technologies  
Marmara University, TURKEY

### ABSTRACT

From the educational and training point of view, to understand and use the Electronic Performance Support Systems (EPSS) efficiently is important in developing web-based applications. In this way, the aim of the study is proving the idea that Lotus Notes is a convenient tool for creating a powerful EPSS within the HSBC Bank example in Istanbul. For this reason, EPSS Domain Features Checklist is developed to assess the study group's perceptions at the bank. The participants of the present study group consisted of 104 expert Lotus Notes (LN) users from the Bank Executive Management Center in Istanbul. The study group was asked online to rank the LN program for the bank applications within the EPSS Domain Features Checklist. Based on the checklist data, the experts' (HSBC Bank operators') perceptions on the LN were calculated within the EPSS features. The study showed that LN is a suitable tool for creating powerful EPSS activities within the HSBC Bank example.

**Keywords:** EPSS, Domains, Features, Lotus Notes, HSBC Bank, Training and Education

### INTRODUCTION

An Electronic Performance Support System (EPSS) is not a software system that contains a specific set of features and functions. Rather, it is the matter of modifying and developing software to measurably improve human performance. These improvements can be achieved with a variety of software development and enhancement strategies (Collis & Verwijs, 1995). EPSS as computer-based systems contains functions for collaboration, coordination, and communication of group in an organization. EPSS is most effective when supporting routine standardized tasks that can be accurately documented and that require standardized actions. The importance of EPSS applications for educational and training activities are very wide (Chandler, 2000; Marioni, 2002; Coffey et al. 2003). Some advantages of EPSS are listed by Seels & Glasgow (1998) as follow:

- Standardizing training and performance throughout the organization. When the work force is using the same tools, references, and training materials, consistency is maximized.
- Reducing the amount of time spent on off-line training, because workers learn on the job.
- Updating information on an immediate and consistent basis.
- Reducing errors, because all workers have immediate and constant access to expert support. (p.117)

In this view, Magliocca et al., (1993) and Marion (2000) expressed that EPSS has the following educational impacts for organizations:

- increased participant awareness and openness,
- changes in professional and paraprofessional practices,
- increase integration,
- increased coordination, communication and collaboration,
- changes due to parent participant and
- consistent user satisfaction and proficiency.

The growth of EPSS has been a marketing phenomenon of amazing breath and depth and will remain so for many years to come. To understand and use the EPSS efficiently is important in developing web based training/educational applications. For these reasons Bayram (2004) explained the theoretical framework of EPSS within software application examples. From the educational and training point of view he described a pentagon model for the interrelated domains of the theoretical framework of EPSS. He also listed some of the theoretical concepts (i.e., performance support, decision making, case studies, user-acceptance, and so on) supporting to the EPSS related features and showing how such concepts sharing same features with the example software programs such as Lotus Notes 6 and Domino 6, Oracle 9i Collaboration Suite, Cleaver Path Collaboration Option. The early studies (Bayram et al, 1996; Bayram & Crossman, 1997) presents the general practical domains and their features, they are not enough to explain all the EPSS process from the educational point of view.

Sophistication in EPSS technology may lead to a deeper understanding of the technology-user interface. Also, a thorough knowledge of human performance may lead to the development of a framework capable of assessing the learning or training processes, of on/in the job setting activities. Meanwhile, we do not have a conceptual basis for understanding how and why they occur. In this view, Bayram (2005) presents a set of conceptual construct that provide power for explanation of EPSS and its features for instructional activities. Also, he promotes the idea that IBM Lotus Notes (LN) is a convenient tool for creating a powerful EPSS in general.

Like similar software programs (such as CleaverPath Collaboration Option or Oracle 9i Collaboration Suite), LN has many features that could be put to service for implementing EPSS, but technology itself does not provide support it. Someone needs to develop an organization that empowers users (employees, bank operators or trainees) with EPSS design information systems that provide appropriate support, and manage learners in a way that they use EPSS. Meanwhile, there is no concrete evaluation study performed in order to prove the efficiency of EPSS conceptual frameworks on the one hand and the usability of their applications in a concrete performance support system example. From this point of view, the paper aims at proving the idea that LN is a convenient tool for creating a powerful EPSS within the HSBC Bank example in Istanbul. Based on the researcher's technical expertise, LN specific environment is chosen as an example tool for creating a powerful EPSS. It is possible to do similar studies by the way of Microsoft Share Point Portal, Mac OS XV 10.2 and the other types of collaborative software systems.

## **LOTUS NOTES**

IBM Lotus Notes system provides integrated on-demand access to information, advice, learning experiences, and tools to enable a high level of job performance with a minimum of support from the other people. As an integrated collaborative environment, the Lotus Notes client server combine enterprise-class messaging and calendaring & scheduling capabilities with a robust platform for collaborative applications.

Lotus Notes allows users to take advantage of advanced functionality, reliable performance and rich security features - and help reduce their total cost of ownership in the process. (IBM Lotus Notes, 2005).

A lot of studies (such as Lee et al., 1989; Ciolfi, 1992; Baird, et al., 1991; Reyes, 1992; Borthwick, 1993; Lee, 1992) focused the educational implications of the Lotus Notes in

practice. It provides for a wide variety of views of information; these views are excellent management tools not available with most database management systems.

This software also seems to offer a natural fit for the work of information professionals - it allows the integration and organization of internal and external information such as e-mail, calendar, downloaded text, reports, address book, news, to do list and the other internal documents as seen on the Figure: 1.

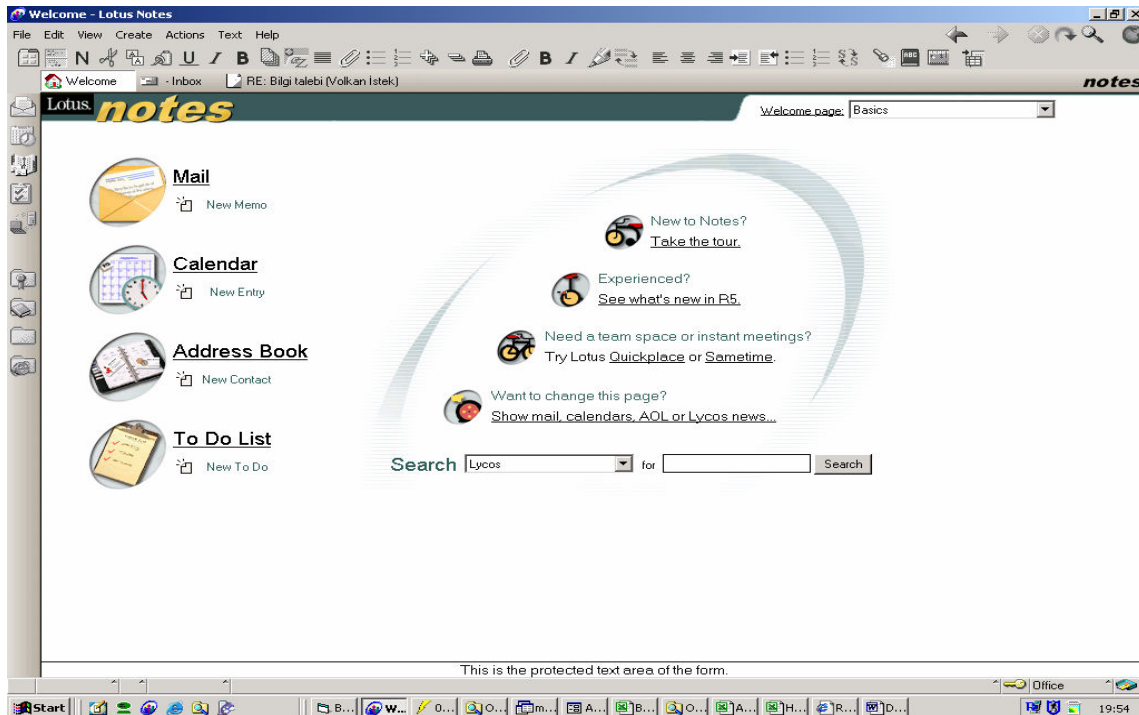


Figure: 1 Lotus Notes Opening Window.

The Figure: 1 shows an example of Lotus Notes Opening Window. Lotus Notes 7 and Domino Messaging Management Ecosystem provides a security-rich messaging and collaboration platform for sharing data and connecting the employees and extended communities.

Collaboration, e-mail management, e-mail hygiene, data management, mobile and unified messaging are the important 3rd party solutions of the system.

Lotus Notes 6 (LN6) has a number of general features for educational purposes such as text handling, reports, news, information integration, standard database interface, simultaneous user access to flexible databases, multi site access to identical data, and integrated electronic mail (Borthwick, 1993; Liberman & Rich, 1993; Tung, et. al, 2000; Marion, 2002; Haxel, 2002).

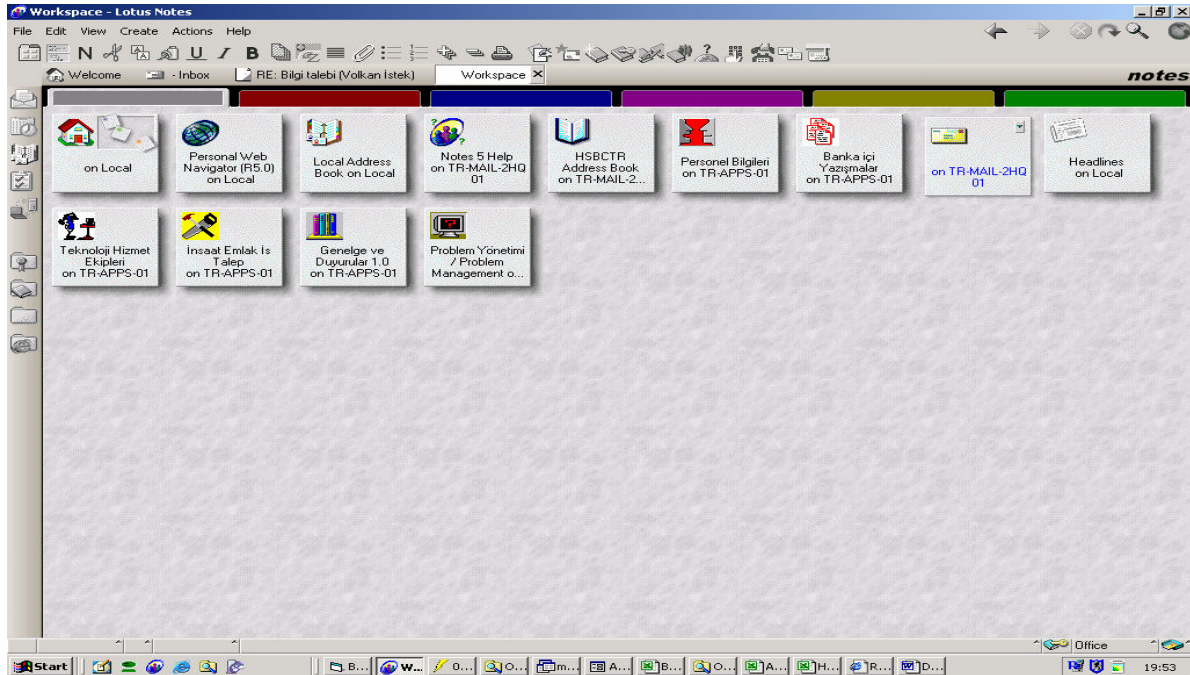
Applications of LN6 include tracking application, broadcast applications, reference applications, and discussion applications (Perez & Rojas, 2000).

Several people or users (learners) in the separate locations (i.e., computer labs or bank branches) can work on a single document by the way of LN domino applications. Figure 2 shows an example web browser application at the Istanbul HSBC Bank.



Figure: 2 HSBC Bank Lotus Notes Web Page

*Lotus Notes* groupware products may have an even greater impact on how we deal with text and images within an organization, and librarians and information professionals can play a key role. In summary, *Lotus Notes* development environment is very flexible and a document library, reference database, or full-text electronic publication is a very straight forward design that an information specialist can easily develop. The following Figure 3 is an example of database features of Lotus Notes 6 in Istanbul HSBC Bank.



Figur: 3 Example Database of the Lotus Notes 6

As Gery (1991) pointed out that EPSS have different kinds of databases such as text, visual, and audio. Text databases have online reference, contains content in various structural forms such as procedures, policy and product information, concepts, glossaries, and stored images of text.

Visual databases have libraries of pictures, schematics, diagrams, graphics, maps, and full-motion video. Audio databases have libraries of sounds, voice sequences, music.

All these databases will be technically stored and organized using hypertext tools, online documentation software, database management systems, and so on.

In this view, LN6' online collaborative environment of the Istanbul HSBC Bank provides all kinds of databases (text, audio or visual) to the user (students) for educational and training activities.

On the other hand, environments for all learners need to be emotionally secure and physically safe. Magliocca and others (1993) pointed out that

- secure relationships enhance collaborative online learning, and training
- accurate, understandable information enhances the learning environment, and
- autonomy and decision making abilities via online performance support increased learning.

During the LN6 applications, the mature personal relationships and accurate, understandable online information can also enhance the feeling of safety in this kinds of learning and training environments (Computer Security, 1996).

Within this type of secure learning environment, there is an opportunity to learn from each other with LN discussion applications (IBM Lotus Software, 2005). With online collaboration, learners "feel more empowered". They are daring and confrontational regarding the expression of ideas (Kubala, 1998, p.73).

On the other hand, successful instructional management strategies (i.e., the combination of learner control, self regulation, and motivation) are necessary for the effective use and design of instruction, the effective utilization and preparation of instruction in a service provide learners with great benefits in managing online instruction.

Such management strategies is also important to develop self-management and learner control skills in a training or learning environment like as LN6.

Because of its structural nature, LN6 (or EPSS) environment provides a vehicle for understanding how knowledge is transformed by the social relationships (or by the way of chat, e-mail, teleconference, videoconference activities) and conflicts within the evolving team (Haxel, 2002).

Cognitive changes emerge out of the dynamics of teamwork that represent "new learning." the result of the process of collaboration and sharing in the interdisciplinary team.

The following Figure: 4, showing an example Lotus Notes e-mail inbox at the Istanbul HSBC Bank.



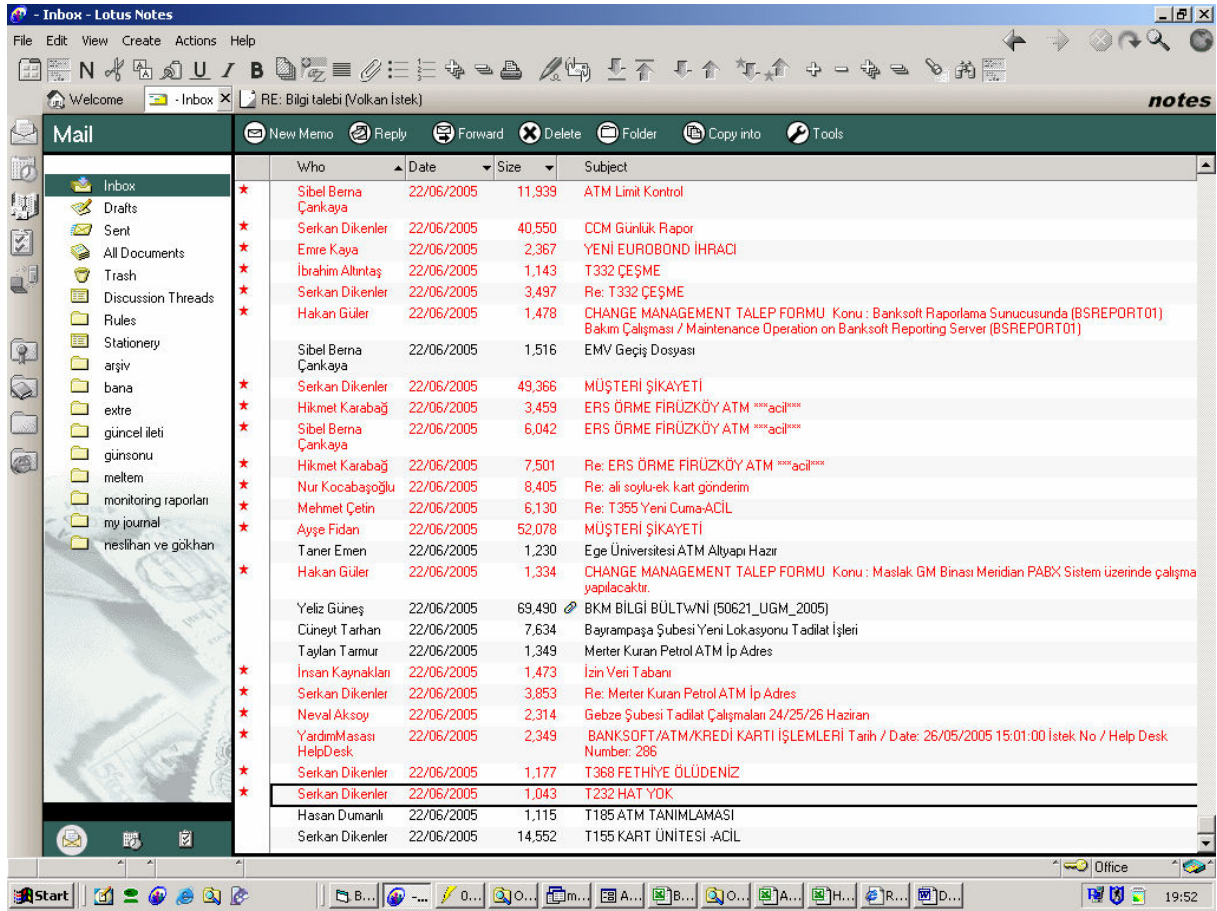


Figure: 4 Lotus Notes Inbox

In the Lotus systems, design issues are structuring development and integration. Data communication networks, mass storage devices, and new software development technologies are giving birth to new mind-sets (IBM Lotus Software, 2003). With the mass customization and intelligent workstations, the ability to tailor products and services to individual users' expectations and needs in a time frame is virtually immediate within EPSS (Gery, 1991; 1995).

From this point of view, the HSBC Bank LN6 inbox environments combine these training issues for interactive electronic learning, performance support; and performance empowerment.

Educators concerned about the empowerment of learners have seen that a restructuring of schools may be necessary if empowerment of learners is to be realized (Heinich, 1973; Reigeluth, 1993). Learner should be seen as producers of knowledge and teachers as managers of learning experiences (Murphy, 1991; Watkins & Lusi, 1989). In this view, learners should be at the heart of restructured educational processes. These processes help all learners (LN6 users) learn how to learn and should empower learners now and for the rest of their lives (Bereiter, 1995).

However, how the learners (users) become empowered? How do they learn how to respond to the challenges of their lives in a manner to maximize performance? In order for them to become empowered, educators have to intervene. Educators should understand the development process of learners and know how to be established an EPSS learning environment that will maximize a learner's (or bank operator's) capabilities.

## RESEARCH METHOD

As a qualitative research type, scanning model is used in this descriptive study. The aim of the study is to prove the efficiency of conceptual framework on the hand and the usability of its application in a concrete performance support system. In this view, determining Istanbul HSBC Bank operators' perceptions on Lotus Notes has been emphasized from EPSS point of view. For this reason the utilization of Lotus Notes 6 attitudes bounded with EPSS features has been examined in 11 different domains. The practical features of the domains are listed as follow.

- 1) Performance Support: Under *performance support*, a number of features such as Performance information, Support mechanism, Improvement-productivity, Independence- flexibility, Token gifts and Empowering have been taken into consideration.
- 2) Problem Solving: Under *problem solving*, a number of features such as Conflict-dilemma-resolution, Decision making, Evaluate skills, Troubleshooting, Alternative solutions and Performance appraisal have been taken into consideration.
- 3) Work Practice: Under *problem solving*, a number of features such as Groupwork, Virtual teams, Training exercises- demonstrations, Fun experience, Integrated units, and Role playing have been taken into consideration.
- 4) Guidance: Under *problem solving*, a number of features such as Online help, Peer dialogue, Sharing of mind, work, questions and discussion, Mail list, newsgroup, forum mechanisms, Search engine, Expert system and Advisory system have been taken into consideration.
- 5) Collaboration- Cooperation: Under *problem solving*, a number of features such as Effective communication, Chat, e-mail, whiteboard, screen sharing, Social context, Team work, Interactivity- peer dialogue and Audio-video conferencing have been taken into consideration.
- 6) Learning Environment: Under *problem solving*, a number of features such as Situated learning,-Anchor instruction, Brainstorming, Feedback, Achieving objectives, Joy of learning and Human memory have been taken into consideration.
- 7) Management System: Under *problem solving*, a number of features such as Instructional-learning environment, Databases, Knowledge skills, Acquisition, Negotiation and Privacy, security, safety have been taken into consideration.
- 8) Motivation: Under *problem solving*, a number of features such as User satisfaction, Self-efficiency-Learner control, Perception, Navigation, Intrinsic motivation-enjoyment and Extrinsic motivation- usefulness have been taken into consideration.
- 9) Case Studies-Examples: Under *problem solving*, a number of features such as Modeling- Role taking, Real world examples, Case demonstrations, Alternative solutions, Practicing and Online collaborative supports have been taken into consideration.
- 10) User-Acceptance: Under *problem solving*, a number of features such as, Easy Self regulation, User-centered, Perceived usefulness, Perceptions, Beliefs and been taken into consideration.
- 11) Cost-Effective: Under *problem solving*, a number of features such as, Easy to use and learn, Time consuming, Reduce training cost, Reduce travel cost, Reduce communication cost and Reduce lost time have been taken into consideration.



Under above general domains and their practical features, Lotus Notes Perceptions of Istanbul HSBC Bank operators were tried to be measured within EPSS conceptual framework.

## **WORKGROUP**

HSBC Bank is one of the famous banks in the world and Turkey. It is also one of the best Lotus Notes system users in Turkey. There are 159 HSBC Bank Branches in different cities of Turkey. In all the branches 4048 persons are working in Turkish HSBC Banks. Among them 1929 persons are working in the General Executive Management Center at the Maslak Plaza in Istanbul.

Among them a total 104 expert Lotus Notes users working ATM Operation Department and Credit Card Post Support Department were chosen to participate in this study at the Maslak Plaza. The study group is expert on the use of Lotus Notes 6 for the Bank system applications.

## **SCALE AND APPLICATIONS**

Within the accompaniment of the information obtained from literature, EPSS practical and theoretical concepts/features criteria has been reached.

Taking such criteria that is richly explained in the previous studies (e.g., Bayram, 2004 and 2005) as a starting point, the EPSS Domains Scale had been prepared as a draft. This draft was examined by an expert group who were experienced on EPSS and Lotus Notes.

On the axis of the information obtained, the scale has been revised and designed by the researcher. Within the developed scale validity and reliability study, the Cronbach alfa inter-consistency coefficient was calculated as 0, 82.

The EPSS Domain Features Checklist is used to assess the Lotus Notes users' perceptions within the EPSS Conceptual Framework.

The assessment scale mentioned which contains, 11 general domains each has seven different practical features, consists of a total 77 items.

The last feature of each domain is namely "other" (please specify). Since the preference percentage- ratio of the last item is not high it has been excused from the judgment list. The final analysis is concluded with 66 items.

At the beginning of the study, the necessary information about the research is given to the Lotus users at the Maslak Plaza, Istanbul. Then they were asked online to rank the Lotus Notes 6 within the EPSS Domain Features Checklist. Based on their own experiences, feelings and perceptions the users put a check all the appropriate items on the list. The percentages and ratios were calculated for each domain and the features.

## **RESULTS**

The following Table: 1 summarizes the results of HSBC Bank Lotus Notes users' preferences within the EPSS point of view.

**Table: 1**  
**General Domains of EPSS and their Features in**  
**Lotus Notes Practice at the HSBC Bank**

<i>General Domains</i>	<i>Practical Features</i>	<i>Practical %</i>	<i>General %</i>
<b>Performance Support</b>	<b>Performance information</b>	<b>39.71</b>	<b>31.19</b>
	<b>Support mechanism</b>	<b>31.16</b>	
	<b>Improvement- Productivity</b>	<b>40.42</b>	
	<b>Independence - Flexibility</b>	<b>29.90</b>	
	<b>Token gifts</b>	<b>11.16</b>	
	<b>Empowering</b>	<b>34.77</b>	
<b>Problem Solving</b>	<b>Conflict/dilemma-resolution</b>	<b>42.03</b>	<b>29.42</b>
	<b>Decision making</b>	<b>28.63</b>	
	<b>Evaluate skills</b>	<b>29.90</b>	
	<b>Troubleshooting</b>	<b>24.42</b>	
	<b>Alternative solutions</b>	<b>25.29</b>	
	<b>Performance appraisal</b>	<b>26.29</b>	
<b>Work Practice</b>	<b>Group work</b>	<b>42.12</b>	<b>32.08</b>
	<b>Virtual teams</b>	<b>35.51</b>	
	<b>Training exercises – Demonstrations</b>	<b>45.71</b>	
	<b>Fun experience</b>	<b>18.69</b>	
	<b>Integrated units</b>	<b>20.56</b>	
	<b>Role playing</b>	<b>29.90</b>	
<b>Guidance</b>	<b>Online help</b>	<b>35.41</b>	<b>30.92</b>
	<b>Peer dialogue, sharing of mind, work, questions and discussion</b>	<b>55.13</b>	
	<b>Mail list, newsgroup, forum mechanisms</b>	<b>38.97</b>	
	<b>Search engine</b>	<b>11.21</b>	
	<b>Expert system</b>	<b>20.56</b>	
	<b>Advisory system</b>	<b>24.23</b>	
<b>Collaboration-Cooperation</b>	<b>Effective communication</b>	<b>45.92</b>	<b>37.52</b>
	<b>Chat, e-mail, whiteboard, screen sharing</b>	<b>49.31</b>	
	<b>Social context</b>	<b>34.29</b>	
	<b>Team work</b>	<b>37.38</b>	
	<b>Interactivity- Peer relationships</b>	<b>47.05</b>	
	<b>Audio-video conferencing</b>	<b>11.20</b>	
<b>Learning Environment</b>	<b>Situated learning -Anchor instruction</b>	<b>24.01</b>	<b>26.46</b>
	<b>Brainstorming</b>	<b>31.77</b>	
	<b>Feedback</b>	<b>34.71</b>	
	<b>Achieving objectives</b>	<b>19.69</b>	
	<b>Joy of learning</b>	<b>21.49</b>	
	<b>Human memory</b>	<b>27.10</b>	
<b>Management System</b>	<b>Instructional-learning environment</b>	<b>34.57</b>	<b>31.72</b>
	<b>Databases</b>	<b>49.38</b>	
	<b>Knowledge skills</b>	<b>24.29</b>	
	<b>Acquisition</b>	<b>16.82</b>	
	<b>Negotiation</b>	<b>14.95</b>	
	<b>Privacy, security and safety</b>	<b>50.31</b>	
<b>Motivation</b>	<b>User satisfaction</b>	<b>39.51</b>	<b>29.15</b>

	Self-efficiency - Learner control	41.92	
	Orientation	14.90	
	Navigation	11.28	
	Intrinsic motivation- Enjoyment	29.90	
	Extrinsic motivation- Usefulness	37.38	
Case-Studies-Examples	Modeling - Role taking	33.49	26.34
	Real world examples	22.42	
	Case demonstrations	23.39	
	Alternative solutions	20.56	
	Practicing	29.97	
	Online collaborative supports	28.23	
User-Acceptance	Easy self-regulation	41.12	28.72
	User-centered	53.47	
	Perceived usefulness	17.81	
	Attitudes – Perceptions	13.08	
	Provide beliefs	14.09	
	Satisfy needs	32.77	
Cost-Effectiveness	Easy to use and learn	67.20	38.22
	Time consuming	47.16	
	Reduce training cost	14.01	
	Reduce travel cost	19.15	
	Reduce communication cost	40.71	
	Reduce lost time	41.12	

From the analyzed results of Performance Support domain items, it has been observed that *improvement & productivity* (40.42 %) is the most and *token gifts* (11.62%) are the last emphasized feature. Under the domain of Problem Solving, *conflict/dilemma resolution* (42.03%) is the most and *troubleshooting* (24.42) is the last emphasized feature. Under the domain of Work Practice, *training exercises- demonstrations* (45.71%) is the most and *fun experience* (18.69%) is the last emphasized feature.

Under the domain of Guidance, *Peer dialogue, sharing of mind, work, questions and discussion* (55.13%) is the most and *search engine* (11.21%) is the last emphasized feature. Under the domain of Collaboration-cooperation, *Chat, e-mail, whiteboard, screen sharing training* (49.31%) is the most and audio-video conferencing (11.20%) is the last emphasized feature. Under the domain of Learning Environment, *feedback* (34.71%) is the most and *achieving objectives* (19.69%) is the last emphasized feature. Under the domain of Learning Environment, *feedback* (34.71%) is the most and *achieving objectives* (19.69%) is the last emphasized feature. Under the domain of Management System, *privacy, security and safety* (50.31%) is the most and *negotiation* (14.95%) is the last emphasized feature.

Under the domain of Motivation, self-efficiency- learner-control *feedback* (41.92%) is the most and *navigation* (11.28%) is the last emphasized feature. Under the domain of Case-Studies Examples, *modeling-role taking* (33.49%) is the most and *alternative solutions* (20.56%) is the last emphasized feature.

Under the domain of User-Acceptance, *user-centered* (53.47%) is the most and *alternative solutions* (20.56%) is the last emphasized feature. Under the domain of Cost-Effectiveness, *easy to use and learn* (67.20%) is the most and *reduce training cost* (19.69%) is the last emphasized feature.

Cost-effectiveness, collaboration-cooperation, work-practice, management system and performance support are the most powerful domains. The domains of learning environment and example case studies are scored as the lowest preferences. The scores are based on the Table: 1, the average score of the total 66 items is 31.06.

The items scored lower than the average need to be improved for powerful EPSS activities at the Istanbul HSBC Bank. From this point of view the following Table 2 shows the top ten most preferred and the bottom ten less preferred items and their percentages.

**Table: 2**  
**The most and the less preferred items**

<b>The most preferred</b>	<b>Percentages</b>	<b>The less preferred</b>	<b>Percentages</b>
<b>Easy to use &amp; learning</b>	<b>67.20</b>	<b>Token gifts</b>	<b>11.16</b>
<b>User-centered</b>	<b>53.47</b>	<b>Audio-video conferencing</b>	<b>11.20</b>
<b>Privacy, security, safety</b>	<b>50.31</b>	<b>Search Enginee</b>	<b>11.21</b>
<b>Databases</b>	<b>49.38</b>	<b>Navigation</b>	<b>11.28</b>
<b>Chat, e-mail, sharing</b>	<b>49.31</b>	<b>Attitudes- perceptions</b>	<b>13.08</b>
<b>Time consuming</b>	<b>47.16</b>	<b>Reduce training cost</b>	<b>14.01</b>
<b>Interactivity</b>	<b>47.05</b>	<b>Provides beliefs</b>	<b>14.09</b>
<b>Effective communication</b>	<b>45.92</b>	<b>Orientation</b>	<b>14.90</b>
<b>Exercises, Demonstrations</b>	<b>45.71</b>	<b>Negotiation</b>	<b>14.95</b>
<b>Groupwork</b>	<b>42.12</b>	<b>Acquisition</b>	<b>16.82</b>

Based on the data on the The Tables 1 and 2, it could be said that if the less preferred items are developed the effectiveness and efficiency of the task oriented EPSS activities would be increased at the Istanbul HSBC Bank.

## **CONCLUSION**

It is now possible to organize globally while working locally: Information technologies such as e-mail, the Internet, and video conferencing to the desktop permit tight coordination of geographically dispersed workers across time zones and cultures. Entire parts of organizations can disappear: Inventory, and the warehouses to store it, can be eliminated as suppliers tie into the firm's computer systems and deliver just what is needed and just in time (Loudon & Loudon, 2005). From this point of view, EPSS provides electronic support to the officers in achieving a performance objective; a feature in which makes it universally and consistently available on demand any time, any place, regardless of situation, without unnecessary intermediaries involved in the process. The system can include a range of support mechanisms and software tools, including advisory systems to help in structuring tasks and decision- making, and other interactive capabilities with the alternative support mechanism systems.

Also, it can be said that designing the strategies and methods also provide effective training in the LN6 program environments. They permit automated, interactive design and representation of complex data, complex and interrelated processes, and the link to entities (functions, users, departments, etc.) via a set of structural design representation and sophisticated cost effective programs (Lohrke, et al., 1999).

In this view, presented a concrete EPSS example for a specific subject group (i.e., HSBC Bank operators) in Lotus Notes practice is an important issue. In fact, experience in applying the conceptual framework methods for EPSS analysis is needed for validation. For this reason, EPSS Domain Features Checklist is developed to assess the HSBC Bank operators' perceptions at the job setting. Within the Checklist data the study showed that LN is an effective tool to deliver instruction to personnel in highly computerized work environments with online references, automated decision support, and just-in-time training. In fact, with their technical, informational and motivational opportunities, LN6 electronic information environments can provide performance empowerment and on-line collaborative support in education and training. The potential utility of an EPSS within LN situation will depend upon the characteristics of both user population and the learning tasks that are to be performed within the learning or training applications.

Thus, the users need to achieve high levels of proficiency very rapidly. Similarly in the context of task characteristics, situations (Lotus Notes 6 or 7) in which the use of an EPSS can be advantageous include: infrequently performed tasks; tasks involving large amount of information; tasks involving multiple steps; applications or procedures that involve extensive functionality, and tasks requiring diverse knowledge. Finally, the study is shown that LN is a suitable tool for creating a powerful EPSS activities within the HSBC Bank example.

From this point of view, it could be said that Lotus Notes is a helpful tool to show and to explain how EPSS activities are doing in what manner at the Istanbul HSBC Bank. Continued research is needed on the EPSS for assessing the impact of different subject groups at the different settings.

#### **BIODATA AND CONTACT ADDRESSES of AUTHOR**



**Dr. Servet BAYRAM** is graduate of the Program in Instructional Design & Technology at the University of Pittsburgh, PA, and completed post-doctoral study in Instructional Systems Technology at the Indiana University, Bloomington, IN.

At the Turkish Air Force Academy, he studied and worked on the EPSS educational implications for pilot training.

Currently, he serves as Chairman of Department of Computer Education & Instructional Technologies at the Marmara University, Istanbul. He became Professor 2006.

Prof. Dr. Servet Bayram  
Marmara Üniversitesi,  
Bilgisayar ve Öğretim Teknolojileri  
Göztepe, Karıyoy Iskanbul, TURKEY  
Email: [sbayram@marmara.edu.tr](mailto:sbayram@marmara.edu.tr)

#### **REFERENCES**

Baird, I. C., & Towns, K. (1991). Preparing low income women for today's workplace: case study on the evolution of a communications models within a job training program. Reports-Research, U.S., Pennsylvania, ERIC Document Reproduction No: Ed 348 533.

Bayram, S. (2005). A conceptual framework for the Electronic Performance Support Systems within IBM Lotus Notes 6 Example, submitted to the *Turkish Online Journal of Distance Education-TOJDE*

Bayram, S. (2004). Revisioning Theoretical Framework of Electronic Performance Support Systems (EPSS) within the Software Application Examples, Turkish Online Journal of Distance Education-TOJDE, Vol. 5, No.2. Internet Link:  
<http://tojde.anadolu.edu.tr/tojde14/articles/bayram.htm>

Bayram, S. & Crossman, D. M. (1997). *The utilization of EPSS in the Turkish Air Force Academy*. Paper presented at the Annual Meeting of the AECT National Convention, February, 12-16, 1997, Albuquerque, New Mexico.

Bayram, S., Schwen, T. & Dillon, A. (July, 1996). *A mathematical framework for the Lotus Notes Release within the EPSS: An expanded definition of the Enriched Learning and*



**Information Environment.** A technical report, School of Education and School of Library & Information Science, Indiana University, Bloomington, IN.

Borthwick, A. G. (1993, April). Effects of keyboarding/typewriting on the Language arts skills of elementary school students. Paper presented at the Annual Meeting of the American Education Research Association. Atlanta, GA.

Breiter, C. (1995). Constructivism, socioculturalism, and Popper's world 3. *Educational Researcher*, 23(7), 21-23.

Cassidy, E. & Kurfman, D. (1977). *Decision making as purpose and process*. In D. Kurfman (Ed.), *Developing decision making skills*. Arlington, VA: National Council for the Social Studies.

Chandler, T. N. (2000) Keeping current in a changing work environment: design issues in repurposing computer-based training for on-the-job training. *International Journal of Industrial Ergonomics* 26 (2), 285-299.

Ciolfi, Q. P. (1992). Microeconomics with microcomputers: Graphing the AH-HA. Producing an idea for the International Conference on Teaching Excellence. Based on an article published in *Florida Educational Computing Quarterly*, Fall 1990. Spreadsheet, pages 16-17. ERIC Document Reproduction No ED: 351 002.

Coffey, J. C., Canas, A. J., Hill, G. Caff, R., Reichherzer, T. & Suri, N. (2003) Knowledge modeling and the creation of EL-Tech: a performance support and training system for electronic technicians, *Expert Systems with Applications*, 25(4) 483-492.

Collis, B. & Verwijs, C. (1995). A human approach to electronic performance and learning support systems: Hybrid EPSS s. *Educational Technology*, 35 (1), 5-21.

Computer Security (1996). Lotus Notes. A new security paradigm, *Computer Law & Security Report*, 12(2), 112-114.

Gery, G. J. (1991). *Electronic Performance Support Systems: How and why to remake the workplace through the strategic application of technology*. Gery Performance Press, Tolland MA.

Gery, G. J. (1995). Attributes and Behaviors of Performance Centered Systems. *Performance Improvement Quarterly*, 8(1), 47-93.

IBM Lotus Notes (2005). *IBM Lotus Software—Notes and Domino 6*, (visited June 7, 2005), <http://www.lotus.com>.

Hannafin, R. D. , & Sullivan, H. J. (1996). Preferences and learner control over amount of instruction. *Journal of Educational Psychology*, 88(1), 162-173.

Haxel, C. (2002). Patent information at Henkel: from documentation and information to collaborative information commerce, *World Patent Information*, 24(1), 25-30.

Heinich, R. (1973). Management models and instructional productivity. In R. G. Scalon & J. Weinberger (Eds.), *Improving productivity for school systems through educational technology* (pp.203-219). Philadelphia, PA: Research for Better Schools.

Keller, J. M. (1992). Motivational systems. In H. Stolovitch & E. Keeps (Eds.), *Handbook of performance technology* (pp. 277-293). San Francisco: Jossey-Bass.

Kubala, T. (1998). Addressing student needs: Teaching on the internet. *T.H.E. Journal*, 25(8), 71-74.

Lee, M. M. (1992, January). *Tracking student transfers: The perils and pitfalls of complying with the new student right to know act*. Paper presented to the New York State Association of Institutional Researchers and Planning Officers, Albany, NY. ERIC Document Reproduction No: ED 372 785.

Lee, M. Y., and others (1989). *Teaching the meaning of statistical techniques with microcomputer simulation*. Paper presented at the Academic Microcomputing Conference, Indianapolis, IN. EREIC Document Reproduction No: ED 340 579.

Liberman, K., & Rich, J. L. (1993). Lotus Notes Databases: The foundation of a virtual library. *Database*, 16, 3, 33-40.

Lohrke, C. T., Dolezal, H. & Reynolds, S. L. (1999). Analytical laboratory: world class distinction with world-wide connection; from managing instrumentation to managing knowledge, *Laboratory Automation & Information Management*, 34(1), 41-49.

Loudon, K., & Loudon, P. J. (2005). *Essential of Management Information Systems*, Prentice Hall International, 6th Edition, New Jersey.

Magliocca, L. A., Sykes, D. J., Anketell, M. T., Tyree, R. B. (1993). *The early integration training project (EITP): A project of the early educational program for children with disabilities*. Ohio State Universty, Columbus. Center for Special Needs Populations. ERIC Document Reproduction No: ED 356 575.

Marion, C. (2002). Attributes of performance-centered systems: What can we learn from five years of EPSS/PCD competition award winners? *Technical Communication*; 49(4), 428-443.

Marion, C. (2000). *Make way for interactive assistance*,  
<http://www.chesco.com/cmarion/PCD/MakeWayforinteractiveAsst.html>

Murphy, J. (1991, March). *Restructuring schools: Capturing and assessing the phenomena*. New York: Teachers College.

Seels, B. & Glasgow, Z. (1998). *Making Instructional Design Decisions* (2<sup>nd</sup> Edition), Prentice Hall, Inc., NJ.

Reigeluth, C. M. (1993). Principles of educational systems design. *International Journal of Educational Research*, 19 (2), 117-13.

Reyes, L. C. (1992). *Starlite workplace literacy program. Final closeout performance report*. Guam Community College, Agena. ERIC Document Reproduction No: ED 351 498.

Thomas, M. (1987, February). Coming to terms with the customer. *Personnel Management*, pp. 24-29.

Watkins, J. M. & Lusi, S. F. (1989, March). Facing the essential tensions: Restructuring from where you are. Paper presented at the annual meeting of the AERA, San Francisco.