

## LOTUS NOTES E-MAIL AND APPLICATIONS MIGRATION - INFRASTRUCTURE ANALYSIS OF LEGISLATIVE BRANCH SOFTWARE

### BACKGROUND

During the 1995 legislative session, three proposals were presented to legislative leaders regarding conversion of Legislative Assembly software and hardware from a mainframe (enterprise server) to a client-server environment. Pythia Corporation, Indianapolis (which developed the wireless network software used by the Indiana General Assembly), estimated \$2,286,538 for a conversion. Public Systems Associates, Denver (which developed the personal computer-based system used by the Louisiana Senate), estimated \$3,656,538 for a conversion. IBM recommended a limited, two-phase conversion--the first phase estimated at \$900,000 to \$1,100,000 and the second phase at \$300,000 to \$400,000. The 54th Legislative Assembly appropriated \$550,644 for the provision of personal computers to legislators. The Legislative Assembly also directed that savings be used as much as possible to assist in the conversion. With a shorter legislative session, \$369,000 became available and was used to acquire personal computers for legislators.

The amount of money appropriated necessitated continuation of legacy (enterprise server) systems. The Legislative Management Committee was assigned the responsibility to administer the appropriation and authorized use of the available funds to:

- Acquire software to develop graphical user interfaces (GUI) so that information available to legislators through the Legislator's Automated Work Station (LAWS) system would have the appearance of personal computer software, e.g., clickable icons rather than text-driven selections;
- Provide office-type personal computer software, e.g., spreadsheet, personal calendar, and word processing;
- Install a wired local area network (LAN) in the legislative chambers and other areas of the legislative wing of the State Capitol to support personal computers;
- Provide legislators with e-mail access to legislative information, e.g., meeting notices, agendas, and minutes; and
- Provide personal computers to 75 legislators.

The software available, at that time, for spreadsheets (Lotus 1-2-3, Quattro Pro, and Excel), e-mail (popmail, cc:Mail, smtpmail, etc.), personal scheduling (Personal Organizer), and word processing (Word Perfect, Word, and Word Pro) was reviewed. In 1995 Lotus Notes was selected as the e-mail software and

Lotus SmartSuite was selected as the primary office software because Lotus SmartSuite included Lotus 1-2-3 and Personal Organizer, the primary spreadsheet and personal scheduling software in use at that time, and other Lotus applications. In addition, Lotus Notes had:

- Excellent security features - Fewer virus attacks on Lotus Notes servers.
- Replication ability - Provided remote access through dial-up that allowed legislators to download data to the personal computer and work with it offline and not incur long-distance charges.
- Application development features - Eliminated the need to purchase additional programming software.
- Document management features - Eliminated the need to purchase additional document storage software.

It should be noted that Microsoft Exchange did not become available until late 1996, and when available did not have comparable functionality.

### 800# DIAL-UP ACCESS

In 1995 the Legislative Management Committee approved the *Policy on Use of Personal Computers by Legislators*. The policy authorized legislators to access the Internet for 60 hours per month. The committee also authorized the Legislative Council staff to determine the most feasible option for providing legislators access to the Internet on the most economical basis. After review of several options (local Internet service providers, credit cards to pay long distance charges, etc.), it was determined 800# dial-up access would provide the best service to legislators at home, in their offices, traveling out of state, and at residences during legislative sessions.

Problems with local Internet service providers included:

- Local Internet service providers required hard-coded IP addresses which had to be changed when the legislators were on the LAN in chambers and then changed again when they left the chambers.
- Not all legislators had local Internet service providers available.
- The difficulty in supporting a myriad of configurations due to a multitude of different Internet service providers.
- Incompatibility with LAWS software.

Using credit cards to pay long-distance charges to dial the Bismarck number required combinations of spaces and commas which varied by the location from which the call was being made. Many attempts were sometimes required to achieve the correct combination to make a connection.

However, 800# dial-up connection has brought its own difficulties. Connection speeds range from 5 to 28.8 megabytes and replication takes a considerable amount of time--10 cents per minute. Proper use of replication, however, is less expensive than remaining connected while reading and responding to e-mail.

Over the years, the Information Technology Department (ITD) and the Legislative Council staff have visited about this issue many times. On August 15, 2003, and September 11, 2003, letters were sent to ITD requesting assistance with providing better remote connections for legislators (Appendix A and Appendix B). The department has provided the following preliminary information:

- The best option for better service would be for legislators to use their own local Internet service provider with a VPN client. The Information Technology Department believes that it can convince local Internet service providers not to require hard-coded IP addresses, but each legislator's connection would have to be determined on a case-by-case basis. DSL or cable modem access costs average \$50 to \$70 per month per user. The VPN client is no additional cost because we pay \$29 per month per device connection.

**Staff recommendation:** Before proceeding on whether to replace state-provided access with a local Internet service provider, several issues need to be addressed:

- Would replacement of state-provided access be universal, e.g., required in every instance?
- Would a legislator who does not have a local Internet service provider be provided with the state-provided access or be required to obtain private access to a local Internet service provider?
- Would a legislator be responsible for obtaining a faster connection speed if regular service provided through a local Internet service provider is at a slower speed than state-provided access?
- Would the e-mail system provided by a local Internet service provider be used in place of Lotus Notes e-mail or any other state standard e-mail system, i.e., Microsoft Outlook? If a decision is made to replace Lotus Notes e-mail with an e-mail system that does not provide for replication of agendas, meeting notices, and minutes, it becomes unnecessary for legislators

to access the state system. Information is available on the legislative branch web site.

- Would a legislator be responsible for obtaining additional e-mail capacity, i.e., storage space for handling additional e-mail generated through legislative business, in addition to regular private e-mail?

## LOTUS NOTES E-MAIL

Legislators recently have suggested that Lotus Notes e-mail be replaced with a state standard e-mail system. It should be noted that Lotus Notes remains an approved software in ITD's enterprise architecture (Appendix C). On August 6, 2003, the ITD enterprise architecture domain team made the following recommendation:

- The state of North Dakota currently supports two messaging and collaboration platforms--Microsoft Exchange and Lotus Notes. This recommendation calls for a study of the impact associated with the consolidation of these two systems and the adoption of Microsoft Exchange as the state's enterprise groupware system.
- Upon approval of this recommendation, the office automation domain team will create a detailed impact statement outlining the steps, critical issues, and costs associated with proceeding (Appendix D).

As a result of the recommendation, on September 8, 2003, Legislative Council staff requested that ITD provide the estimated costs, time, and procedures to migrate from Lotus Notes e-mail to Microsoft Outlook (Appendix E). The department's project estimate dated October 9, 2003, indicated that the cost of acquiring licenses would be \$13,765 and annual renewals would cost \$2,752. The project estimate also provided overview and background information (Appendix F).

On November 4, 2003, the Legislative Council staff requested additional information from ITD regarding the cost of the migration, steps to migrate, and responsibility for each step (Appendix G). In addition, Legislative Council staff, working with ITD staff, initiated the process of migrating a test e-mail user from Lotus Notes to Microsoft Outlook. The following issues were discovered:

- Calendar entries do not migrate well; some will have to be recreated manually.
- Groups in personal address books that do not migrate will have to be recreated manually.
- Acceptance of meeting notices into personal calendars would not be available and notification of acceptance would not be returned to the Legislative Council.
- Replication of meeting agendas, memorandums, and minutes is not available, but

notices, agendas, memorandums, and minutes are available on the legislative branch web site.

- No reply to e-mail originally received in Lotus Notes is available during migration.

On November 7, 2003, the department's response to the questions indicated that ITD would not charge for services during the migration, the Legislative Council staff would have primary responsibility for the migration, and no third-party software is required because Lotus Notes and Microsoft have applications that facilitate migration (Appendix H).

## LOTUS SMARTSUITE MIGRATION

Lotus Notes and Lotus SmartSuite contains word processing and scheduling applications. The word processing software is Lotus Word Pro. This software is used throughout the legislative branch to prepare documents such as letters and memorandums. A Word Pro document attached to an e-mail usually can be opened only by a recipient who has Lotus Word Pro. To ensure that a recipient can read a Word Pro document, a legislator must copy and paste the document into the e-mail message rather than attach the document to the e-mail. No matter what word processing software is used to produce an attachment, the recipient may not be able to open it if the version of software they are using is not the same as the sender's.

Some legislators have suggested replacing Lotus Word Pro with Microsoft Word because of the commonality of that word processing software. Microsoft Word is contained within Microsoft Office. The cost of migrating from Lotus SmartSuite to Microsoft Office is \$551.79 per user for the initial purchase of the licenses or \$183.93 per user prorated annually for three years (required minimum). There are 239 users of Lotus Word Pro in the legislative branch. The total cost of migrating to Microsoft Office would be \$131,877.81 or \$43,959.27 per year if prorated for three years. The cost of annually maintaining Lotus SmartSuite licenses is \$48.25 per user, for a total cost of \$11,531.75 annually.

## LOTUS NOTES APPLICATIONS CONVERSION ESTIMATES

Migration from Lotus Notes e-mail to Microsoft Outlook will affect several Lotus Notes applications. As a result, on September 8, 2003, ITD was requested to determine the application development software that is available that would provide the same functionality and the cost to convert to that software (Appendix I). Lotus Notes e-mail is integrated into the following Lotus Notes applications:

- Fiscal notes system - Provides review by staff, routes fiscal note requests to agencies, publishes to the web, includes agency contacts

data base, and makes the fiscal notes available in LAWS.

- Conference committee assignment system - Used by the House majority leader's assistant in scheduling conference committees, provides free-time search for persons and rooms for scheduling, populates legislators' conference committee views in Lotus Notes, and displays on monitors during session.
- Telephone message system - Captures messages delivered via telephone or e-mail and places them in LAWS constituents' views.
- Meeting materials system - Used primarily in the interim to create meeting notices, agendas, minutes, and correspondence; integrates with expense voucher application, committees data base, and address books of members and public subscribers; displays meetings to the hall monitor system; and publishes to the web.
- Expense voucher application - Tracks expenditures; integrates with meeting materials, payroll import, and PCM Suite (people, committees, mail list, and data dictionary applications); prints vouchers; and generates reports.
- Payroll import application - Interfaces with an Office of Management and Budget data file, integrates with the expense voucher application, and provides payroll and per diem for processing expenses.
- Digital sender - Captures images and documents for electronic distribution and integrates with Domino.Doc.
- Domino.Doc - Document management system that integrates with all Lotus Notes applications and is also used by committee clerks during legislative sessions.

The following applications reside in Lotus Notes, but are not integrated with Lotus Notes e-mail:

- Subject index application - A research data base that provides an on-line subject index and printed index and integrates with committee application.
- Memorandum index application - A research data base that provides an index to Legislative Council memorandums, provides quarterly index supplement and 10-year compilation, and integrates with Domino.Doc.
- North Dakota discussion data base - Knowledge base for documentation and development purposes.

The Information Technology Department provides six hours of time without charge to make project estimates. In this instance, the cost estimated to provide an estimate of the cost of migrating from Lotus Notes applications is \$25,032 with a two-month completion period (Appendix J).

**Staff recommendation:** A decision to replace Lotus Notes e-mail with Microsoft Exchange e-mail should take into consideration the effect of a different e-mail system on applications integrated within Lotus Notes e-mail or residing within Lotus Notes. This information will provide a more complete estimate of the costs and benefits of migration to a different e-mail system.

### **INFRASTRUCTURE ANALYSIS**

The legacy systems that run on the enterprise server remain in use. With each mainframe upgrade, more and more fixes have to be applied to the systems. Because of the age of the systems, few people know how to program and fix them. The central processing unit (CPU) charges by ITD to run these systems on the mainframe are very high. Systems do not communicate--budget status and the bill drafting

system. Data must be rekeyed. These systems are not easy to learn and require an experienced user for efficiency of use.

The Legislative Assembly appropriated \$200,000 to the Legislative Council for a legislative branch technology infrastructure analysis. The analysis will result in a request for proposal for replacement of the legacy systems and integration of the resulting applications.

Mr. Scott Kost, Techwise Solutions LLC, the consultant contracted by the Information Technology Committee for manager services relating to the committee's information technology organizational and technology management studies of state government, has been contacted with regard to providing management services for this process which will result in a request for proposal.

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