

DARPA Funding Request

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Executive Summary

DARPA is the unquestioned world leader in the development of information technology since the early 1960's. That leadership has led to most of the major breakthroughs in modern computing. Commercial application developers like Leader Technologies ("Leader") benefit immensely from DARPA's pioneering work. Leader has been able to development its innovations by leveraging platforms and technologies that were first developed by DARPA. In fact, Leader's privately-funded R&D effort (which started in 1997) has leveraged many DARPA-based technologies including Sun, UNIX, Cisco, TCP/IP, SEI, RAID and ATM, among others.

In 1997, Leader set out to address enterprise-level organizational and technical communications shortcomings in three previously nonintegrated fields:

- Collaboration
- Leadership
- Knowledge Management (i.e., intellectual capital)

Leader's R&D efforts to date have established a new software architectural paradigm that will form the basis for future work in the aforementioned fields.

The shortcomings that Leader identified (and has quietly built solutions for) are now being widely discussed in the popular press. For example, Admiral Harold W. Gehman Jr. in a recent speech to a national information technology conference openly complained that RFP responses from the major DoD vendors in the area of

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collaboration had grown stale in that no new solutions beyond Lotus Notes and Microsoft Exchange were being proffered.

The current downturn in the telecommunications industry is now being blamed on this same lack of innovation with regard to compelling next-generation "killer application" products and services that help to justify the current over-building of high-speed transmission capacity.¹

Major information technology challenges today include:

- Industry, academia and government are searching for ways to retain the "knowledge capital" of their most experienced people;
- The accounting world seeks a universal mechanism to value this knowledge capital;
- Enterprise leadership seeks easily-managed ways to channel and focus that knowledge capital on mission critical business strategies.

While industry has attacked these problems as discrete and unconnected problems; Leader attacked them as a single communications problem. The resulting technology Leader developed is Leader2Leader™. The remainder of this proposal lays out a blueprint for DARPA to continue its tradition of innovative information technology research partnerships by supporting this WPAFB-UD-Leader initiative.

The Leader Team

Leader Technologies ("Leader") and The University of Dayton Research Institute ("UDRI") propose a team effort to deliver the research and development efforts and applications proposed herein for Wright Patterson Air Force Base ("WPAFB").

Leader Technologies LLC

Leader, a certified small business, delivers a highly experienced research, design and development programming team that is uniquely suited to WPAFB requirements. Leader brings a base of existing code in Leader2Leader™ as well as a substantial knowledge-base regarding the enhancements of that code for the WPAFB requirement. Many of the Leader personnel are seasoned veterans of Department of Defense initiatives such as the Defense Finance and Accounting Service, the Shared Data Warehouse, the National Air Intelligence Center, to name a just a few. In addition, Leader Directors include Major General James Freeze, United States Army

¹ Online. *Reuters* July 8, 2001, http://dailynews.yahoo.com/hlx/nm/20010708/tc/telecoms_broadband_outlook_dc_1.html.

(ret.) and Professor James Chandler, President of the National Intellectual Property Law Institute, whose reputations need no introduction. In addition, Leader personnel include seasoned IT veterans who have designed and built communications and networking infrastructures for AT&T, Bank One, Qwest, UUNet, and Oracle. Additionally, Leader is completing a CRADA with Lawrence Livermore National Laboratory (LLNL) with regard to its security architecture and uses of the Leader platform in DoD-specific signals and human intelligence applications.

University of Dayton Research Institute

The University of Dayton Research Institute (UDRI) staff of approximately 300 full-time engineers, scientists, and support personnel with annual revenues exceeding \$40M, provides basic and applied research for government and industry. UDRI has both a long history of IT development (see: Appendix C) and long-standing R&D relationship with numerous entities at WPAFB. Consequently, UDRI brings a solid, local-to-Dayton, support infrastructure needed to provide continuity in critical areas of this project such as training, testing, systems integration, documentation and sustainability. In addition, UDRI is intimately familiar with the administrative and security requirements at WPAFB. In a phrase, the organizational relationships between WPAFB and UDRI are longstanding.

WPAFB

In the spirit of private-public sector partnerships, Wright Patterson Air Force Base (WPAFB) will be both a client and a partner in this project. Deputy CIO, Douglas W. Fleser, at WPAFB will help provide project objectives and coordinate deployment of this system for widespread use at WPAFB.

The Leader-UDRI Team

The Leader-UDRI team is uniquely suited to deliver and support the innovative solutions required by WPAFB and to do so in a timely, efficient manner.

A Brand New Concept

What is unique about the Leader approach? It is a technological concept and a business philosophy. We seek to both reinvent the way enterprises manage intellectual capital, and to reinvent the way they acquire and pay for the tools needed to do this.

A Better Idea Requires A New Approach

Leader resisted the temptation during the last 3 years, despite numerous offers, to design to vertical niche technical requirements. Vertical niches, with a few notable exceptions, have been the modus operandi of the software world. Second, Leader stayed focused on solving the complex technical design hurdles involved with unifying leadership and intellectual capital communications (a.k.a. knowledge management) imperatives into collaboration technologies supporting a scaled, global environment.

Leader developed a new communications platform that unifies leadership, collaboration and intellectual capital technologies across an enterprise. These efforts in enterprises have previously been separate “silo” R&D approaches labeled as document management, decision support, executive information systems, knowledge management, messaging, unified messaging, groupware, records management, directory management, collaboration, portals, middleware, ERP, CRM, SFA, records management, and supply chain management.

Enterprise Pricing Models

Software application pricing has evolved from fixed price to run-time pricing to current per user-seat and per-CPU licenses. The market has come to realize that a large factor in long term sustainability is the ongoing financial wherewithal needed to continue to improve and enhance developed software offerings. Fixed price models can only help here if there is a steady stream of new customers. Run-time models, by contrast, created a versioning nightmare for developers. In run-time models, the customer gets a fixed price for the then current version of the application, but is often reluctant to upgrade to new versions, leaving the developer to continually seek new customers to sustain its ongoing development efforts.

Leader2Leader™ pricing for WPAFB will use a per user-seat per year pricing structure. This allows WPAFB to budget accurately and simultaneously allows Leader to continue to enhance and support the Leader2Leader™ platform.

Leader2Leader™'s \$35 per month per user-seat licensing costs are comparable to the fully-loaded costs involved with implementing a Microsoft Exchange Server or Lotus Notes/Domino server configuration. Leader2Leader™, however, provides many additional cost savings because of its web-server-centric approach. For example, Microsoft Exchange and Lotus Notes are support-intensive in that they require staffing to support the local configuration of each user local client machine... just to access the system. Exchange can require one support person per 1000 users just to keep everybody's local machines working properly. Using a fully-loaded staffing cost of \$75,000 per year for this person, that works out to \$75 per year per user in just supporting the local machine configurations for Exchange. This cost would be completely absorbed into a much broader approach by Leader2Leader™.

Most niche software applications are currently being licensed separately to enterprises. Leader2Leader™ integrates many such applications into a common environment. These applications include E-mail, fax, voice mail, instant messaging, project management, calendaring, tasking, surveys, workflow, directory management, charting, bulletin boards, meetings, whiteboards, conference calling, address books, personal information management, groupware, shared folders, date stamping, file validation and certification, document management, knowledge management and decision support. Therefore, Leader2Leader™ creates great efficiencies in its \$35 per user per month pricing if one were to aggregate the effective per user per month pricing for comparable functionality from nonintegrated applications.

Leader Objectives

Why is the Leader concept so significant? Underlying the basic concept are six primary objectives that tell the story: *functionality & adaptability, scalability, ease-of-support, timeliness, platform independence* and *security*. When one studies the evolution of current collaboration technologies (more specifically Microsoft Exchange, Lotus Notes and Novell Groupwise), one sees an evolution of security, features and functions, not an intentional bottom-up design. The inherent security of one's data has never been a core driver for any of the current major vendors. Rather, security has been an after-thought once more foundational issues were addressed; issues like formats, protocols, compatibility and connectivity.

By contrast, Leader's experts, all experienced in the strengths and weaknesses of almost all major systems currently deployed in business, government and education, went back to the drawing board and developed a communications system from the ground up without the flaws endemic to collaboration systems currently available. By way of example, Leader's new approach has captured the attention of senior scientists at Lawrence Livermore National Laboratory who are completing a CRADA with Leader to provide ongoing support and refinement of Leader's security models.

The Leader system is significantly different and new in the following ways.

Functionality & Adaptability -- All Leader collaboration and communications features focus the user, by default, on his or her leadership and performance priorities; they also capture, by default, the intellectual capital knowledge flow. No other system in the world does this. These features put Leader in a class of its own given that this functionality can simultaneously support and organize the often fragmented priorities among senior leadership, management, finance, administration, human resources, education and training, sales and marketing, operations, production, etc.

Scalability -- The Leader system is a fully scalable web platform supporting large and small enterprises as well as web-based subscriptions.

Ease of Support -- Leader's application is totally accessible from any web browser, meaning there is nothing for the systems administrator to have to install or support on the user's local machine. The Leader application uses only "tried and true" client-side components, nothing non-standard. This means that no special or unique skill bases are required to support the system.

Timeliness -- Most database systems are historical in perspective; meaning they manipulate pre-existing data. Collaboration systems, by contrast, provide some (near) real-time data in such forms as e-mail, enhanced fax, groupware, calendaring, instant messaging, and voice mail. Only decision support analytical tools provide forward-looking data. No system, except Leader, currently provides timely data across a spectrum of *past-present-&future*. Leader's application provides a real-time (and timely) communications environment that unifies these previously disparate "silos" of functionality from past, current and future perspectives.

Platform Independence -- Leader's application is platform independent, meaning it can run in any popular hardware and operating system environment, be it Windows, Apple, IBM, Sun, Linux, Unix, WAP, etc.

Security -- Leader has developed a dynamic security architecture that allows users to control their security policies in a scaled, web-based environment down to the data component level.

Government Client

Leader can meet the communication and knowledge management needs of complex organizations such as those supported by **Douglas W. Fleser, Deputy CIO - Business at Wright-Patterson AFB (WPAFB)**. Mr. Fleser has a diverse customer base where he provides direct IT support to 12,000 users and indirect support to another 8,000 users.

Mr. Fleser has identified the following major WPAFB IT priorities:

1. **Records Management** -- A records management initiative is beginning at WPAFB to standardize the indexing and retrieval of electronic documents across multiple repositories. This is part of an AF-wide electronic records management effort using a module of LiveLink known as iRIMS.
2. **Acquisitions Management** -- Knowledge Management An enterprise initiative is underway at WPAFB to reorganize the management of acquisitions into an

Enterprise Management concept linking communities of interest associated with Aerospace systems. That concept will provide a single point of contact for all other Major Commands for issues related to Aerospace systems. Improved knowledge management and collaboration capabilities will be required to effectively provide the right information and management tools for this concept to succeed.

3. **Engineering Collaboration** -- A collaborative initiative is underway within the Air Force Research Lab (AFRL), the High Performance Computing Group (WPAFB) and other partners to share R&D results more effectively among engineering teams.
4. **Knowledge Management** -- A knowledge management initiative is planned and needed to ensure that the "corporate knowledge" possessed by soon-to-retire senior staff isn't lost when those people retire and to improve the productivity of the staff that has been "downsized" over the last several years

Leader's technology can help Mr. Fleser meet all 4 of these priorities simultaneously. In records management by providing a scalable collaboration platform that is integrated with iRIMs documents. In Acquisitions Management by providing a rapidly-deployable environment for coordinating and facilitating this reorganization. In Engineering Collaboration by providing the communicates environment for a secure intranet / extranet implementation. And finally, for Knowledge Management by providing a proactive capture, storage, and retrieval mechanism that requires no user intervention or ponderous meta-data indexing and knowledge documentation. In a phrase, Leader's technology has been, in many ways, been ready-made for the solution set Mr. Fleser has delineated. In fact, Leader's introduction to the other National Laboratories leads us to believe that each and every National Laboratory requires a similar solutions. What we do for WPAFB we can easily replicate at the other National Laboratories.

Proposal

An initial DARPA financing of \$11.6M is sought to complete Phase I of this project.

Leader has achieved significant technological breakthroughs in its privately-funded 3-year research and development effort. The Leader2Leader™ platform is ideally-suited to facilitate an ability for WPAFB to simultaneously achieve its objectives in all 4 areas of need identified in this briefing. The Leader2Leader™ platform solves a whole set of mission-critical communications, collaboration and knowledge management problems currently plaguing government and the national security.

More specifically, Leader's platform needs some minor module additions in the form of "LeaderCubes™ to completely meet some systems integration requirements in bridging to the iRIMS product as well as other priority data silos at WPAFB. These needs have been identified and explained to Leader by Mr. Douglas W. Fleser, Deputy CIO – Business, and Deputy Director for Strategic Planning and Investment at Wright Patterson Air Force Base.

- Brief history of the development of Leader™ (i.e. what exists today)
 - Vision of comprehensive Intellectual Capital Management
 - Totally original architecture developed
 - Thin client configuration
 - Working collaboration modules already developed in Leader2Leader™

- What needs funding
 - R&D for LeaderCube™ development that bridges existing systems to Leader2Leader™ -- adaption modules that adapt existing data sources to Leader2Leader™; making it appear to be data that is native to the Leader system.
 - Adaptation module testing
 - Adaptation module deployment
 - System operational support
 - Performance and productivity metrics

- Deliverables (a total solution that meets WPAFB's 4 objectives)
 - Leader2Leader™ licenses
 - 6 LeaderCubes™ modules
 - LeaderCubes™ testing, support, training, documentation, systems integration, help.
 - Leader2Leader™ system support & integration to existing data base environments

Roles of Team Members

The team will build on what Leader has already developed and create a total solution that both meets the needs of WPAFB and serves as a model for other DoD organizations.

Leader -- has developed a communications platform called Leader2Leader™ that creates a common, scalable platform for *engineering collaboration, records management coordination, managing communities of interest and knowledge management.*

- Leader2Leader™™ licenses
- Leader Appliance™ hardware platform & support
- Development environment
- LeaderCube™ development

UDRI – testing, training, metrics, support, and legacy integration

- LeaderCube™ documentation, training & help
- LeaderCube™ performance testing
- LeaderCube™ systems integration
- WPAFB metrics studies

WPAFB – User and model for other DoD organizations

- Facilities & management
- Internal bandwidth
- External bandwidth
- Leader2Leader™™ internal help desk
- Leader2Leader™™ internal technical support

The total number of WPAFB users supported by this DARPA project will largely depend upon the longer-term view taken by WPAFB. The numbers in the attached spreadsheet assume Leader2Leader™ supports all 20,000 WPAFB users.

Costs

Grant funding will be allocated in portions. First, there will be a license agreement for WPAFB usage of the technology that has already been developed. Second will be the research and the development portion to further develop the basic product and to integrate it with existing WPAFB systems.

Licensed portion

Leader2Leader™ provides a unified web interface to a broad range of needs supporting collaboration, communications, leadership and knowledge management (a.k.a. intellectual capital). The enclosed appendices detail the projected savings from the use of Leader2Leader™. The following is a summary of those benefits/savings that can be more easily quantified. (Please note that these are conservative numbers and the savings could be much more substantial.)

TABLE 1. Projected Savings (min.)

Year	Cost	Savings per User per Year	ROI
1	\$60,850,716	\$3,043	545%
2	\$63,770,208	\$3,189	733%
3	\$63,810,208	\$3,191	734%
4	\$63,600,716	\$3,180	696%
5	\$64,490,208	\$3,225	742%
6	\$63,330,208	\$3,167	728%

The following table show the per user per year costs for a Leader2Leader implementation at WPAFB for 20,000 users.

TABLE 2. Total R&D costs, incl. licenses*

Year	Cost	Cost per User per Year
1	\$11,174,492	\$559
2	\$8,695,000	\$432
3	\$8,685,000	\$435
4	\$9,144,492	\$457
5	\$8,685,000	\$435
6	\$8,695,000	\$435

Development

This project will be led by Leader Technologies with assistance from UD as a co-leader. Mr. Ed Detwiler of Leader will be the project manager for Leader. Mr. Detwiler was formerly Sr. Vice President of Bank One and is the person who built Bank One’s entire computing infrastructure. Leader will work with WPAFB to set up its hosting facility, internal support infrastructure and installation of Leader2Leader™. Leader will also lead the design and development of the LeaderCubes™ in consultation with Mr. Fleser at WPAFB and the University of Dayton. Weekly project status meetings will be held to keep a tight rein on activities, budgets and deliverables. The University of Dayton will allocate its staff during the timelines set up for each cube with regard to documentation, testing, training, helps, and systems integration. The first LeaderCube™ supporting the LiveLink iRIMs document management system will be delivered in 4 months, with each subsequent cube being delivered in approximate 1.6 month intervals. All products and services will be delivered by the end of the 12th month.

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Appendix A – 6 Year Project Projections

See 6 year spreadsheet originally prepared for the Briefing (no changes).

Appendix B -- Spreadsheet Comments:

Costs Spreadsheet Comments

Leader2LeaderTM licenses -- Cost covers support, normal upgrades, new versions (but, not WPAFB requested enhancements that are over and above normal customer requests.)

Hardware platform & support – Covered for the first three years by the DARPA financing; to be picked up by WPAFB in years 4-6.

Development environment – A mirror of the WPAFB configuration for a Leader development and testing environment.

Internal Bandwidth – inside the WPAFB intranet.

External Bandwidth – links to all external networks.

Facilities Management – WPAFB provisioning of fully loaded data center costs incl. UPS, physical security, sf, management, HVAC, etc.

LeaderCubeTM Development – design and development of 6 ties between Leader2LeaderTM and existing WPAFB data silos; one cube known is for LiveLink by OpenText.

LeaderCubeTM Documentation, Training & Help -- Written and online documentation, training media development and implementation.

LeaderCubeTM Performance Testing -- Initial capacity and performance evaluation; bottleneck elimination; final configuration refinement; storage/archiving policies.

LeaderCube™ Systems Integration -- Assist in the design of the integration approach; testing of the integrated system; implementation, installation of the integrated system.

WPAFB Metrics Studies – performance and usage studies to evaluate true costs of ownership and use as well as numerous collaboration statistics that correlate system usage with strategic objectives fulfillment.

Cost Displacement Spreadsheet Comments

Fax Machines – 50% fewer fax machines needed because incoming faxes will go right to appropriate Digital Leaderboards™. Assume a fully-loaded cost over the life of the machine, incl. maintenance at \$1000. (displaced by LeaderFax™)

Assessments, Evaluations & Survey Instruments – LeaderVote™ automated way of producing and distributing survey (e.g., skills testing, inventories, instruments, evaluation, new product focus groups, needs assessments, opinion surveys, voting) will eliminate at least \$30 per user per year in production , printing, distribution, compilation, and licensing of formal and ad hoc survey instruments. (replaced by LeaderVote™)

Directory Management Resources -- \$110 per year per user (industry number) in savings over current methods for entering, tracking, updating and deleting enterprise master records on each employee. (displaced by LeaderMyProfile™)

Wasted Time in Meetings – Used a high conservative number of 15 min. per user per week saved re. poor documentation, preparation, background and source material distribution, reviewing minutes, etc. (reduced by LeaderMeeting™ and LeaderPhone™)

MS Outlook Targeted Viruses – MS Outlook viruses are impotent in LeaderMail™ and therefore the enterprise can conservatively save \$20 per user per year in costs now incurred.

Non-proliferation of E-mail Attachments – Save 10MB per user per day at a cost savings of \$6.56 per GB in spinning disk storage.

Phone Conferencing – Conservatively assumed that only 10% of the user community would even use the LeaderPhone™ service and that they would make 4 calls per week at an average of 30 minutes per call with 7 people on the call at a savings over current costs of \$.25 per minute per leg.

Travel Time – Conservatively used 16 hours a year as the savings per user gained from use of LeaderPhone™ and LeaderMeeting™. We're using a \$40/hour time cost

Document Searching & Finding – Conservatively used 15 minutes per user per week as the amount of time saved not having to search for documents, files, faxes, voice mails, Emails. Etc. We're using a \$40/hour time cost

Scanning & Deleting Superfluous Email – Conservatively estimated that each user spends 0.43 hours per week scanning and deleting 50 superfluous messages a day. Then, we reduced that savings by 50%. We're using a \$40/hour time cost. (The number here is likely factors higher than we are using according to recent Gartner Group studies.) (reduced with LeaderMail™)

Superfluous Browsing – Conservatively used an estimate of 15 min. per week per user as the amount of time users currently waste in superfluous “research” because they don't have better access to internal documents that answer those questions. According to many studies, this estimate is low.

Exchange Server Licensing Costs – Estimated these cost can be reduced by \$50 per seat as user migrate to LeaderMail™). Assumed a 20% migration per year starting in the second year with that migration going no higher than 80%.

MS Project Licensing Costs -- Estimated these cost can be reduced by \$50 per seat as user migrate to LeaderTask™). Assumed a 20% migration per year starting in the second year with that migration going no higher than 80%.

Organizational Restructuring – Very conservatively estimated that each manager would save 4 hours per year in time now spent pondering over restructuring plans and how to implement those change technologically. This number is likely very low. We're using a \$40/hour time cost.

Client-side Software – the Leader2Leader™™ simple browser client configuration saves a whole host of maintenance and support costs. These benefits for WPAFB cannot yet be determined.

Thin Client Configuration – Leader2LeaderTM implements all the benefits of a “thin client” or “network computer” architecture with all its associated benefits. These benefits for WPAFB cannot yet be determined.

Management Priorities & Initiatives -- Leader2LeaderTM keeps management priorities in front of all users at all times creating untold benefits relative to clear vision, goals, objectives and responsibilities. These benefits for WPAFB cannot yet be determined.

Enterprise, Directorate, Group and Individual Productivity Gains – Strategy industry studies point to dramatic gains that can occur when an enterprise is able to clearly focus on its goals and its infrastructure supports that focus. 15-50% jumps in productivity gains have been observed. These benefits for WPAFB cannot yet be determined

MS Office Suite & Application – The Leader2LeaderTM environment is platform vendor neutral. It will run on and support all of the major operating systems and office suite environments. This means an enterprise can drastically reduce its dependence on Microsoft products without losing functionality. These benefits for WPAFB cannot yet be determined

Availability of Ohio Support – Leader is headquartered in Columbus, Ohio with 5 high-level developers working in the Dayton area. This means Leader, along with the University of Dayton personnel involved with this project can give highly personalized and responsive attention to this project. These benefits for WPAFB cannot yet be determined

Spending Decision Support – As this project proceeds along iterative design and decision pathways, WPAFB will have a highly-experience Think Tank of players between Leader and the University of Dayton that will be available. These benefits for WPAFB cannot yet be determined

WPAFB-UD-Leader DARPA Proposal

WPAFB user base =		20,000		Year							
Costs	Source	Units	Unit descriptor	Costs	descriptor	1	2	3	4	5	6
Leader2Leader™ licenses, term	Leader	20,000	users	\$ 35.00	/user/month	8,400,000	8,400,000	8,400,000			
Leader2Leader™ licenses, tail	Leader	20,000	users	\$ 35.00	/user/month				8,400,000	8,400,000	8,400,000
Hardware platform & support, term	Leader	20,000	users	\$ 449,492	/system	449,492					
Hardware platform & support, tail	WPAFB	20,000	users	\$ 449,492	/system				449,492		
Development environment	Leader	1	system	\$ 75,000	/system	75,000	15,000	15,000	15,000	15,000	15,000
Internal Bandwidth	WPAFB				No net change						
External Bandwidth	WPAFB				No net change						
Facilities & Management	WPAFB	200	square footage	\$ 500	/square foot/year	100,000	100,000	100,000	100,000	100,000	100,000
LeaderCube™ Development	Leader	6	db silo cubes	\$ 150,000	/cube	900,000	180,000	180,000	180,000	180,000	180,000
LeaderCube™ Documentation, Training & Help	Univ. of Dayton	6	db silo cubes	\$ 41,667	/cube	250,000					
LeaderCube™ Performance Testing	Univ. of Dayton	6	db silo cubes	\$ 83,333	/cube	500,000					
LeaderCube™ System Integration	Univ. of Dayton	6	db silo cubes	\$ 83,333	/cube	500,000					
WPAFB Metrics Studies	Univ. of Dayton	3	years	\$ 100,000	/year	100,000	100,000	100,000			
WPAFB Leader2Leader™ internal help desk	WPAFB	1.25	man-years/year	\$ 120,000	/person/year	150,000	150,000	150,000	150,000	150,000	150,000
WPAFB LeaderCube™ internal technical support	WPAFB	1.25	man-years/year	\$ 120,000	/person/year	150,000	150,000	150,000	150,000	150,000	150,000
Total R&D Costs						\$ 11,574,492	\$ 8,695,000	\$ 8,695,000	\$ 9,144,492	\$ 8,695,000	\$ 8,695,000
Cost displacement											
50% fewer Fax Machines (displaced by LeaderFax™)		200	machines	\$ 1,000	/machine		\$200,000			\$200,000	
Fewer paper-based Assessments, Evaluation & Survey Instruments (replaced by LeaderVote™)		20,000	users	\$ 30	/user/year	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 600,000
Fewer Directory Management Resources needed and reduced errors and omissions in employee-related datakeeping (displaced by LeaderMyProfile™)		20,000	users	\$110	/user/year	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000	\$ 2,200,000
Savings of Wasted Time in Meetings from poor documentation, preparation, background and source material distribution, reviewing minutes, etc. (reduced by LeaderMeeting™)		20,000	users	0.25	hours/week/user	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000
Savings by not having to recover from MS Outlook Targeted Viruses (eliminated by LeaderMail™)		20,000	users	\$ 20	/user/year	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
Savings from Non-proliferation of E-mail Attachments to distribution lists (eliminated by LeaderMail™)		20,000	users	\$ 281,875	/system/year	\$ 281,875	\$ 281,875	\$ 281,875	\$ 281,875	\$ 281,875	\$ 281,875
Savings in Phone Conferencing costs (replaced by LeaderPhone™ and LeaderMeeting™)		20,000	users	\$ 2,250,000	/system/year	\$ 2,250,000	\$ 2,250,000	\$ 2,250,000	\$ 2,250,000	\$ 2,250,000	\$ 2,250,000

Savings in Travel Time costs (replaced by the virtual meeting capacities of LeaderPhone™ and LeaderMeeting™)	20,000 users	16 hours/user/year	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000	\$12,800,000
Savings in Document Searching & Finding (replaces time spent in manual and silo searches by LeaderFind™)	20,000 users	0.25 hour/week/user	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000
Savings by reducing the time now spent Scanning and Deleting Superfluous Email (reduced with LeaderMail™)	20,000 users	0.43 hours/week/user	\$ 8,598,333	\$ 8,598,333	\$ 8,598,333	\$ 8,598,333	\$ 8,598,333	\$ 8,598,333
Savings by reducing the time now spent in Superfluous Browsing (reduced by LeaderFind™)	20,000 users	0.25 hours/week/user	\$ 5,025,000	\$ 5,025,000	\$ 5,025,000	\$ 5,025,000	\$ 5,025,000	\$ 5,025,000
Reduce Exchange Server Licensing Costs in migration from Exchange Mail to LeaderMail™)	20,000 users	\$ 50 /user		\$ 200,000	\$ 400,000	\$ 600,000	\$ 800,000	
Reduced costs for MS Project (reduced by LeaderTask™)	4,000 users	\$ 50 /user		\$ 40,000	\$ 80,000	\$ 120,000	\$ 160,000	
Savings and efficiencies in Organizational Restructuring Costs and re-distribution of intellectual capital	2,000 managers	4 hours/user/year	\$ 320,000	\$ 320,000	\$ 320,000	\$ 320,000	\$ 320,000	\$ 320,000
Reduce Client-side Software maintenance (because Leader2Leader™ is simple browser based)	20,000 users	1 hours/user/year	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000
<p>Reduced costs due to Thin Client Configuration (maintenance, support, upgrades, lower hardware replacement costs, supports handheld devices, network computers, eliminates need for software distribution, time savings dealing with end user)</p> <p>Reduced costs associated with the system's real-time support of Management Priorities and Initiatives</p> <p>Productivity Gains associated with system's support of enterprise's strategic priorities</p> <p>Reduced dependence on MS Office Suite packages; vendor independence allows us to support all major office suites (e.g. Sun StarOffice, Corel Office Suite, Lotus SmartSuite)</p> <p>Reduced costs for transfer of knowledge i.e. Training Replacement Personnel, Lost Opportunity Costs, Knowledge Management Losses, and General Training Costs due to fingertip accessibility of Leaderboard information.)</p> <p>Reduced costs and increased customer service due to Availability of Local Ohio Support in Leader.</p>	20,000 users							
Total Costs Displaced			\$ 53,275,208	\$ 53,715,208	\$ 53,755,208	\$ 53,995,208	\$ 54,435,208	\$ 53,275,208
Net Savings			\$ 41,700,716	\$ 45,020,208	\$ 45,060,208	\$ 44,850,716	\$ 45,740,208	\$ 44,580,208
Cumulative Net Savings			\$ 41,700,716	\$ 86,720,925	\$ 131,781,133	\$ 176,631,849	\$ 222,372,058	\$ 266,952,266
ROI			360%	518%	518%	490%	526%	513%

DRAFT

**DEFENSE ADVANCED RESEARCH PROJECTS AGENCY
(DARPA) FUNDING REQUEST**

Between

WRIGHT-PATTERSON AIR FORCE BASE

and

LEADER TECHNOLOGIES LLC

and

UNIVERSITY OF DAYTON RESEARCH INSTITUTE

For

**ADVANCED CROSS-PLATFORM COMMUNICATIONS ENVIRONMENT
AND ANTI-TERRORISM COMMAND CENTER PROTOTYPE**

Prepared by

Leader Technologies LLC
Westerville (Columbus), Ohio

ad

University of Dayton Research Institute
Dayton, Ohio

DARPA Funding Request

Prepared by Michael T. McKibben, CEO
Leader Technologies LLC
&
Clancy Cross
University of Dayton Research Institute

Proprietary & Confidential

SECTION 1

Proposal to the Defense Advanced Research Projects Agency (DARPA) for funding an Advanced Cross-platform Communications Environment and Anti-terrorism Command Center Prototype

Executive Summary

1 Introduction

We at Leader Technologies, in cooperation with the University of Dayton Research Institute (UDRI), are pleased to offer the following request for funding to DARPA with a view to contributing further to DARPA's ongoing role as the leading global innovator of information technologies. Wright Patterson Air Force Base (WPAFB), Douglas W. Fleser, Deputy CIO, has identified a number of areas of mission-critical need for which Leader Technologies has built specific solutions over the last 3-years of intensive research and development. We at Leader intend to cooperate extensively with Mr. Fleser and his WPAFB team. In addition, we have engaged the capable resources of the UDRI in the implementation of this \$12,074,495 Phase 1 proposal to be delivered over the following 12 months.

The tragic events of September 11, 2001 have only further heightened the urgency of this project. In addition to this project being able to thoroughly support the WPAFB technical requirements, this project can now join the frontlines in our War on Terrorism by providing a fully-operational NORAD-like Anti-terrorism Command & Control Theater environment prototype that can support the needs of the Secretary for Homeland Security, FBI, CIA, FEMA and the CDC in their requirements to improve communications and collaboration capabilities. Little did we know when we set out to build Leader2Leader™ 3 years ago that it would be tailor-made for the War on Terrorism effort.

2 Problem Statement

“A lack of technology needed to analyze and integrate data from disparate sources is proving to be an early answer to people asking how the U.S. disaster could have occurred, security experts admit.” *Infoworld*, September 14, 2001

This same problem statement can be applied to the customer of this proposed DARPA grant, namely Wright Patterson Air Force Base, Douglas W. Fleser, Deputy CIO. Mr. Fleser has identified 4 areas of priority for WPAFB: records management, acquisitions, management, engineering collaboration, and knowledge management. Prior to September 11, 2001, Mr. Fleser felt and growing sense of priority and urgency to these priorities as they related mainly, at the time, to the coming “brain drain” of federal employees with significant knowledge of our most critical defense systems, and, as it related to facilitating secure, distributed engineering collaboration environments across the United States Air Force communications network.

The tragic events of September 11, 2001 have only served to heighten the priority for what Mr. Fleser had previously identified as his set of needs. In fact, this WPAFB DARPA can very clearly “kill two birds with one stone” by becoming the prototype for a NORAD-like Anti-terrorism Command and Control Theater for potential use by the Secretary for Homeland Security that is fed data from existing data repositories. This same system can then be evaluated for use in related security applications with the Center for Disease Control (DCD) and the Federal Emergence Management Agency (FEMA).

3 Objectives

To implement a new Leader2Leader™ enterprise-wide collaboration environment at Wright Patterson Air Force Base (WPAFB) that satisfies priority WPAFB infrastructure needs in records management, acquisitions, management, engineering collaboration, and knowledge management.

To develop LeaderCube™ data integration modules as bridges between six high priority WPAFB data repositories and the Leader2Leader™ collaboration system.

To build a prototype NORAD-like Anti-terrorism Command and Control Theater at WPAFB to evaluate the capabilities of the Leader2Leader™ / LeaderCubes™ environment for use as the collaboration engine for inter-agency collaboration within the DoD, DCD, FEMA, etc.

4 Summary of Approach

Leader uses a combination of Waterfall and Extreme programming engineering methodologies project methodologies. The Waterfall methodology is employed up to the alpha phase of a project, at which time the team switches to Extreme Programming methods to drive the product through testing and into production. This combination of methodologies has proven quite successful in the completion of Leader's first commercial product, LeaderPhone™ Teleconferencing Services.

WPAFB will become a customer for the LeaderPhone™ Teleconferencing Services. WPAFB will determine whether it wishes to use the LeaderPhone™ services using Leader's existing external infrastructure or whether it may wish to install the LeaderPhone™ technology within its firewalls. WPAFB will become a classical beta customer for the full Leader2Leader™ platform and will receive commensurate licenses to do so. Leader will develop LeaderCubes™ according to specifications developed jointly with WPAFB for the tying of WPAFB mission-critical systems with Leader2Leader™ after which WPAFB will receive a perpetual internal license to the LeaderCubes™ according to the DARPA intellectual property agreement.

5 Team Qualifications & Resources

The Leader team is staffed with information technology and management veterans with extensive, multi-disciplined skills in all phases of this project from organization and management to programming, implementation and customer support. In fact, the Leader resumes read like a *Who's Who* in American business and technology. To name a few and their accomplishments:

- a. Michael T. McKibben, Founder & CEO – Formerly, rebuilt AT&T's Windows messaging and enhanced fax infrastructure; the principal designer of Leader2Leader™
- b. Brad Whiteman, CTO – Formerly, conceived and built the Shared Data Warehouse for the Department of Defense
- c. Ed Detwiler, Director – Formerly, built and managed Bank One's thrice-redundant global banking infrastructure.
- d. Jeff Lamb, VP of Engineering – Former senior architect for the National Air Intelligence Center (NAIC)
- e. Steve Hanna, Project Manager – Former Lockheed and Oracle senior project manager for SIGINT projects at WPAFB
- f. Professor James Chandler, Director – President of the National Intellectual Property Law Institute and a principal security, intelligence and intellectual property advisor to over 202 jurisdictions worldwide.
- g. Major General James Freeze, US Army (ret.), Director -- former head of the US Army Security Agency; Asst. Deputy Director of NSA; author of "The Freeze Report" on Department of Energy security.
- h. University of Dayton Research Institute -- Staff with approximately 300 full-time engineers, scientists, and support personnel with annual revenues exceeding \$40M,

provides basic and applied research for government and industry. UDRI has both a long history of IT development (see: Appendix C) and long-standing R&D relationship with numerous entities at WPAFB.

- i. Clancy W. Cross, Associate Research Analyst, UDRI – Currently head of the UDRI Web Development Center
- j. Ronald L. Thomas, Senior Software Engineer – Responsible for proposals, design and implementation for the UDRI Web Development Center

Leader currently has the facilities and computer resources to build and support this proposed project. Leader has approximately 6,000 square feet of secure engineering and management facilities in Westerville, Ohio and employs over 20 full-time people. Leader's facility is secured to a high commercial standard, including video surveillance, intrusion, fire and smoke detection. Leader also leases co-location facilities in the Columbus area as well as maintains robust development servers on premises. Leader will soon expand its co-located facilities within a major telco provider. UDRI will use existing facilities to provide the documentation, training and testing services specified in this proposal.

6 Expected Outcomes

6.1 Deliverables

- 6.1.a.1 Leader2Leader™ software licenses for 20,000 WPAFB employees
- 6.1.a.2 Six (6) LeaderCube™ unlimited (for internal use) software licenses with full documentation
- 6.1.a.3 Six (6) WPAFB data repositories fully integrated into the Leader2Leader™ platform
- 6.1.a.4 Leader2Leader™ hardware and hosting platform fully tested and operational at WPAFB
- 6.1.a.5 WPAFB customer and technical support staff trained and in place
- 6.1.a.6 A NORAD-like Anti-terrorism Command and Control Theater full operational in prototype form at WPAFB or other mutually suitable location.

6.2 Timing

- a. Leader2Leader™ platform installation and training will be fully implemented by the end of Q1 of 2002.
- b. LeaderCube™ development, testing, implementation, documentation and training for six (6) modules will be completed by the end of Q2 of 2002.
- c. The NORAD-like Anti-terrorism Command & Control Theater prototype will be completed by the end of Q2 of 2002, unless this priority is moved up by DARPA to address the pressing needs of the Secretary for Homeland Security.

6.3 Benefits to Client

- a. WPAFB will receive a working, integrated, scalable, flexible solution to its Records Management, Acquisitions Management, Engineering Collaboration and Knowledge Management priority projections in a time frame that is factors ahead of where WPAFB thought it could be in a 6-12 month time frame if all of these projects were let separately.
- b. DARPA will have a fully operational NORAD-like Anti-terrorism Command and Control Theater prototype from which various applications and uses can be determined – all in a very short period of time; much shorter than if all those projects were just going out to bid in the coming months.

SECTION 2

Program Details

1 Problem Statement

“A lack of technology needed to analyze and integrate data from disparate sources is proving to be an early answer to people asking how the U.S. disaster could have occurred, security experts admit.” *Infoworld*, September 14, 2001

“The anthrax crisis has exposed a national public health IT infrastructure that’s seriously ill-prepared to deal with such an emergency. In fact, that infrastructure is so antiquated that the Centers for Disease Control and Prevention likened it to a “pony express” system that relies on paper-based reports and phone calls in a world driven by the speed of the Internet... only half of the country’s 59 state and territorial health departments and 6,000 state and local health departments and boards had full-time Internet connectivity...”
Computerworld, October 22, 2001

Ignoring the total lack of even the most rudimentary technology, where technology exists a statement like “A lack of technology needed to analyze and integrate data from disparate sources” is as good a problem statement as any. Further investigation, however, reveals a troubling nest of culprits¹ that demand a common solution to root them out. The culprits are:

- **Control & Rapid Response** – Absence of a control center to coordinate global human, signals, imaging and other intelligence from disparate sources.
- **Integration** – Absence of a common repository for collaboration around and analysis of human and signals intelligence; absence of an infrastructure to share intelligence data across discreet intelligence networks; failure of technology aggregation approaches to solve the problem.
- **Human Capital** – Ineffective methods to prevent “brain drain” when experienced personnel retire; a.k.a. knowledge management.
- **Distributed Engineering** – Ineffective engineering collaboration infrastructure across multiple networks and commands.
- **Records Management** – Ineffective methods for capturing, indexing, storing and retrieving electronic documents for use across multiple networks and commands.
- **Security** – Highly vulnerable systems infrastructures founded upon ineffective security models that are being further eroded by the sheer volume of daily intrusions.

Past solutions attacked each of these needs independently of the others. These approaches created vertical “silo” solutions -- solutions that solved a particular set of problems without consideration of the larger context.

¹ The source or cause of a problem. *Merriam-Webster Collegiate Dictionary*. Online: <http://www.m-w.com>.

For example, discrete records management solutions each have specific approaches for indexing documents. These solutions usually involve typing specific keywords that can be used to search for the document later. This approach may work if the user is sitting in front of a computer terminal for long stretches of time. However, they are impractical for senior management, for example. More senior people spend much less time in front of a computer terminal. And, when they do sit down in front of a machine, they do not have the time to methodically catalog each and every document they review. In this example, the “silo²” solution for records management rendered that records management system ineffective for use as a “human capital” tool for capturing the knowledge of senior management.

Wright Patterson Air Force Base (WPAFB) has identified four specific areas of need that are the subject of this DARPA proposal. WPAFB has needs in (1) **Records Management**, (2) **Acquisitions Management**, (3) **Engineering Collaboration**, and (4) **Knowledge Management**. The WPAFB requirements in these four areas all point to a set of common themes that lead us back to our basic premise that a fundamental lack of technology currently exists to address these solutions adequately and in a multi-disciplined way.

More generally, engineering, intelligence, enterprise management, customer service, rapid deployment environments all need an integrated solution to these problems. Up till now the market response has been aggregation. Government vendors have tried to aggregate every permutation and combination of off-the-shelf solution. They haven't worked, as the horrific events of 9-11-01 proved. Aggregation is not the solution. Aggregation creates Rube Goldberg devices,³ not elegant, straightforward ones. True integration at the architectural level is the need and the solution. However, such work is extremely difficult, time consuming and requires cross-disciplined experts in not only technology but social engineering.

Unfortunately, the term “systems integration” has become a euphemism for *aggregation* (of off-the shelf “silo” approaches), not true *integration* (of real-world, contextual work processes). What the problems above require is true integration.

² “Silo” technology solutions quickly render themselves ineffective as integrated solutions due to technical design constraints. Design assumptions get hard coded early in the programming process and become inflexible outside the design assumptions on which the coding focused. Custom approaches quickly develop at every level of the coding from the front end interfaces, to the business logic, to the database design and stored procedures. Taken together, these constraints are awfully hard to undo later; or, if changes are made, these programs can quickly become complicated Rube Goldberg contraptions.

³ Convolved ways to do simple things. Online: <http://www.rube-goldberg.com>.

True Integration for:

- Intelligence
- Engineering
- Enterprise Management
- Customer Service

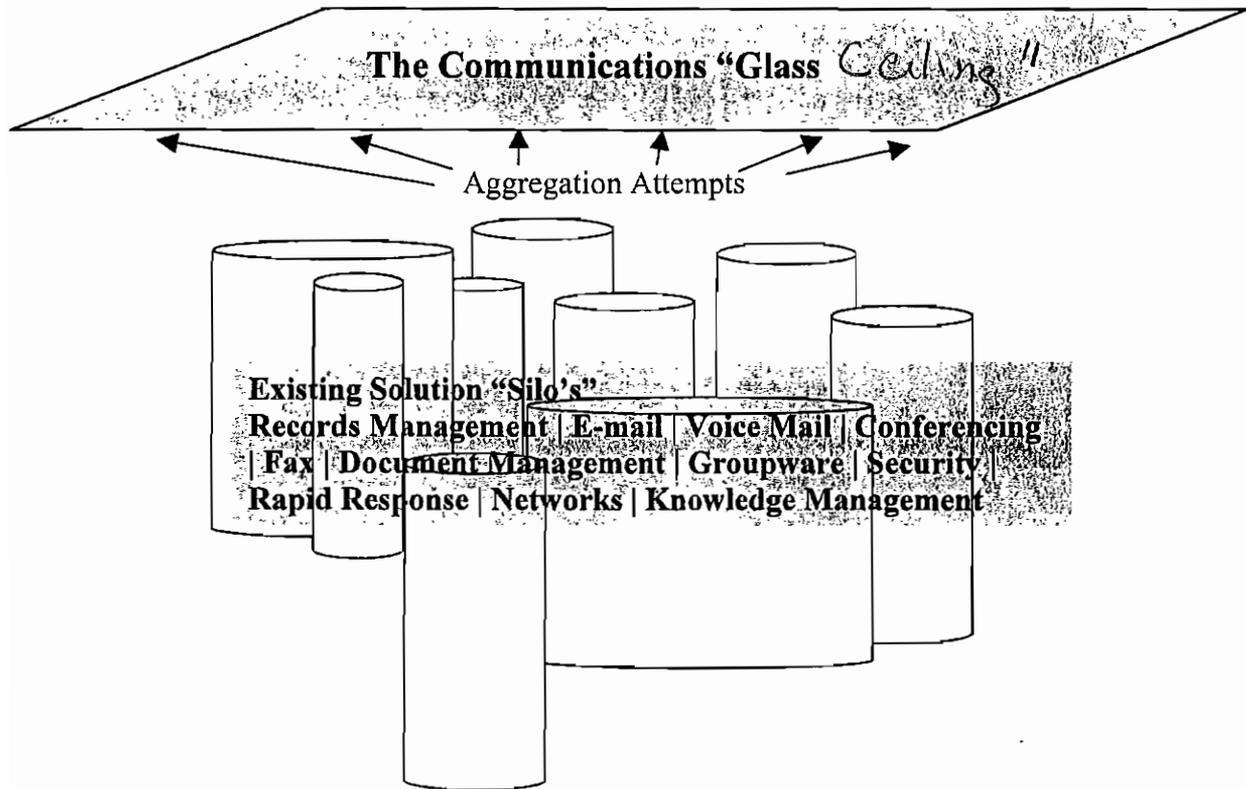


Figure 1: The Communications Technology "Glass Ceiling"

Since aggregation has not proven effective, what is the solution? The solution is a new, more contextual approach. With the benefit of hindsight, we can now go back and take a critical look at the design assumptions made when the various silo solutions were devised. What did we do right? What did we do wrong? Where were we shortsighted? Where could we not possibly have foreseen the problems that current experience tells us exist? What research advances change our underlying assumptions about constraints and opportunities.

The fact is, no significant advances have occurred in collaboration for a decade. Shared foldering championed by groupware is a decade old now. However, groupware emerged in the heyday of client-server. While valiant attempts have been made to incorporate Internet technologies into these technologies, these attempts suffer greatly from the Rube Goldberg syndrome.

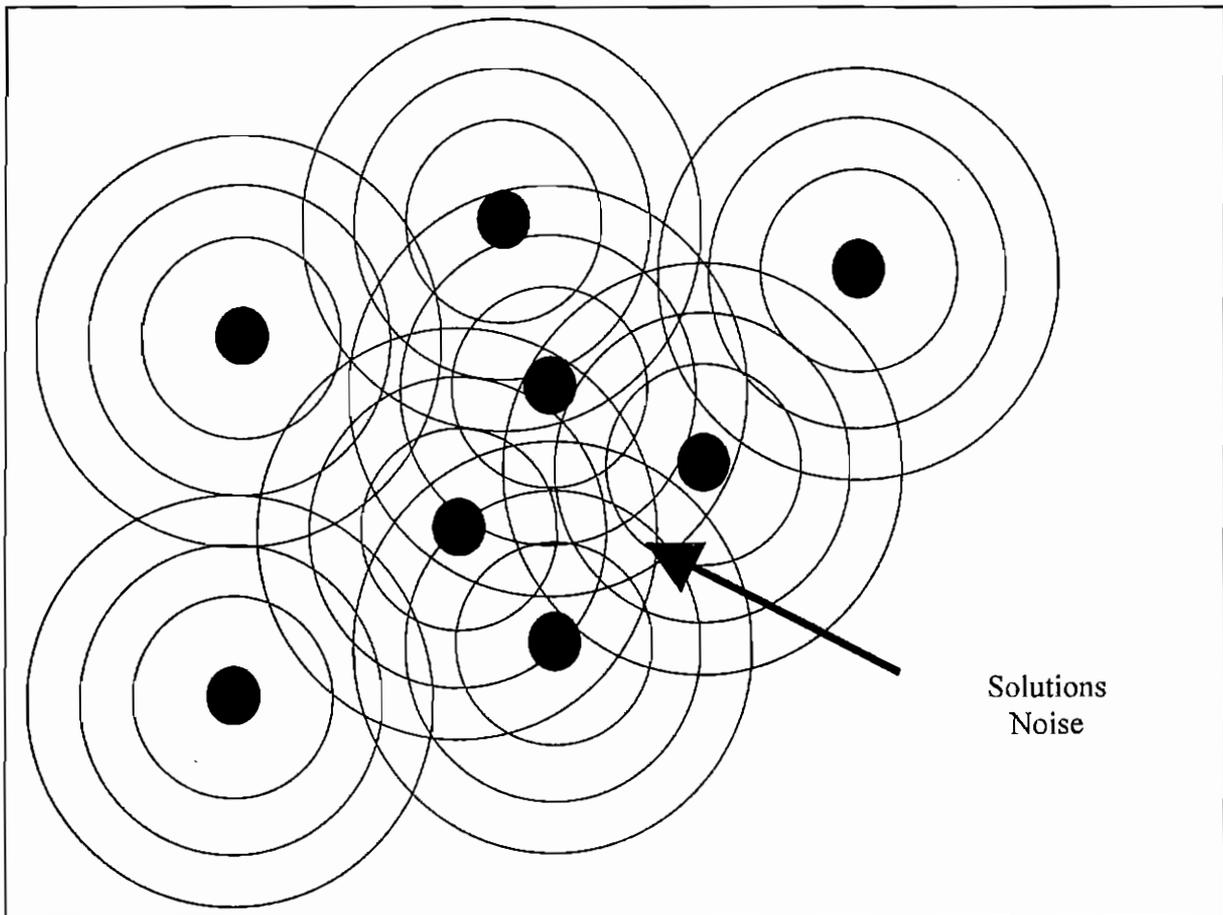


Figure 2: The Confusion in the Communications Technology Marketplace exists because vendor marketing presentations tend to overlap benefits stories, when in fact, the promises are several ripples removed from the core of any particular technology (represented by the black dots (e.g., groupware, document management, telephone, conferencing, decision support)). Leader went back to the drawing board.

Perhaps an automobile analogy may help. Today's aggregated collaboration solutions are akin to building a car with a potpourri of parts from GM, Ford, Chrysler, Mitsubishi, Yugo, Trabant, Fiat, Hundai, Toyota, Volvo, Honda, Duct Tape, Super Glue, axle grease, a hammer, bungee chords and homemade parts. The result? An inflexible device that runs but is certainly user un-friendly. Such is the state of affairs today in the collaboration arena.

The solutions to this problem is a complete RE-THINK of the problems and better solutions. In the past, the focus has been on using what has already been built and trying to make it work for an ever-expanding set of requirements. This approach breaks down once one gets more than a couple of iterations away from the core design specification. After that, the software becomes Rube Goldberg and quickly becomes a backhanded way to solve a straightforward problem. This creates a tremendous amount of "solutions noise" in the marketplace as vendors working from different core technologies (e.g., document management, messaging, groupware, knowledge management, portals, ERP) work to adapt their basic story to the story flavor preference of the moment – whether their solution is right for the problem or not. "Make it work" has been the name of the game. The following illustration shows how various core technology stories now overlap one another in the marketplace, *creating more confusion that solution.*

A Truly Integrated Solution

A dynamic, scalable, rapidly deployable communications environment is called for. Such an environment is:

- **Adaptable** -- Can adapt to changing requirements, people and circumstances without having to reprogram it.
- **Scalable** -- Can accommodate and support millions of people, or just a few.
- **Flexible** -- Can allow for a continuum of control and deployment needs from highly centralized command and control to highly de-centralized and distributed
- **Secure** – Is highly secure and employs current standards and protocols without the inherent security vulnerabilities of those standards.
- **User-friendly** -- It is friendly, easy to use and can be accessed from a variety of devices all the way from handheld wireless devices to the most sophisticate engineering computers.
- **Compatible** – Allows for seamless integration with of current systems
- **Platform Independent** – Can run on multiple vendor platforms
- **Supportable** – Able to be broadly maintained using existing work forces and skill bases.
- **Timely** – Able to be deployed quickly to meet the serious requirements being put forth for intelligence gathering and analysis within such agencies as the FBI, CIA, CDC, FEMA, Regional and Local Law Enforcement, Fire & Emergency Coordinators, and others.

2 Objectives

Michael T. McKibben formed Leader Technologies in 1997 with the specific intent to breakthrough the collaboration technology “glass ceiling.” That led to the recruitment of a technology “dream team” and a 3-year research and development effort that has led to the development of an entirely new enterprise collaboration platform called Leader2Leader™. A part of this platform, namely LeaderPhone™ Teleconferencing Services, is now out of beta and commercially available. Leader2Leader™ is currently in alpha testing.

Leader2Leader™ capabilities have been demonstrated to Douglas W. Fleser, Deputy CIO - Business at Wright-Patterson AFB (WPAFB). Mr. Fleser immediately saw applicability to 4 prior areas at WPAFB.

Mr. Fleser identified the following high priorities at WPAFB:

1. **Records Management** -- A records management initiative is beginning at WPAFB to standardize the indexing and retrieval of electronic documents across multiple repositories. This is part of an AF-wide electronic records management effort using a module of LiveLink known as iRIMS.
2. **Acquisitions Management** -- Knowledge Management An enterprise initiative is underway at WPAFB to reorganize the management of acquisitions into an Enterprise Management concept linking communities of interest associated with Aerospace systems. That concept will provide a single point of contact for all other Major Commands for issues related to Aerospace systems. Improved knowledge management and collaboration capabilities will be required to effectively provide the right information and management tools for this concept to succeed.
3. **Engineering Collaboration** -- A collaborative initiative is underway within the Air Force Research Lab (AFRL), the High Performance Computing Group (WPAFB) and other partners to share R&D results more effectively among engineering teams.
4. **Knowledge Management** -- A knowledge management initiative is planned and needed to ensure that the “corporate knowledge” possessed by soon-to-retire senior staff isn’t lost when those people retire and to improve the productivity of the staff that has been “downsized” over the last several years
5. **Data Migration** – WPAFB has numerous data repositories running on a variety of aging platforms. Aging platforms require replacement strategies, some of which are extremely difficult to accommodate, sometimes due to the economics involved and other times due to technical difficulties of these proprietary systems.

Since the events of September 11, 2001, the need for this WPAFB work has intensified. In fact, the WPAFB project can be the prototype for a NORAD-like Big Board Theater facility using Leader2Leader™ that could be used to help US intelligence services under the new Secretary for Homeland Security to better coordinate cross-agency intelligence efforts.

The WPAFB project needs to have built certain integration modules that will bridge WPAFB's existing data repositories with Leader2Leader™. This technology can then be applied to other data repositories in the various –INTs as the collaboration efforts intensify under the Secretary for Homeland Security. Ironically, this integration plan was already drawn up by Michael McKibben at Leader in cooperation with Doug Fleser at WPAFB prior to September 11.

In short, the prospective WPAFB-Leader-UD DARPA project can see a fully functioning inter-agency collaborative environment up and running as early as the first quarter of 2002 by piggybacking this proposed DARPA.

3 Summary of Approach

This DARPA will attack WPAFB's 4 areas of priority. This will involve the licensing of Leader2Leader™ as well as the development of LeaderCubes™ that will facilitate integration of existing WPAFB data repositories into the Leader2Leader™ collaborative environment.

Simultaneously, we will construct a NORAD-like theater prototype at WPAFB that will show how the Leader2Leader™ system can be used to coordinate multi-agency cooperation.

Leader uses a combination of Waterfall⁴ and Extreme Programming (XP)⁵ project approaches. Waterfall is used at the beginning of a project to scope the work to be performed, timelines, staffing, resources and budgets. Waterfall is maintained through to the beginning of the alpha testing phase. At alpha testing, the Leader programming team shifts to Extreme Programming in order to shorten turn around times, enable more experimentation with feature and function enhancements, and speed time to completion.

⁴ Online: <http://courses.cs.vt.edu/csonline/SE/Lessons/Waterfall/Lesson.html>

⁵ Online: <http://www.extremeprogramming.org/map/project.html>

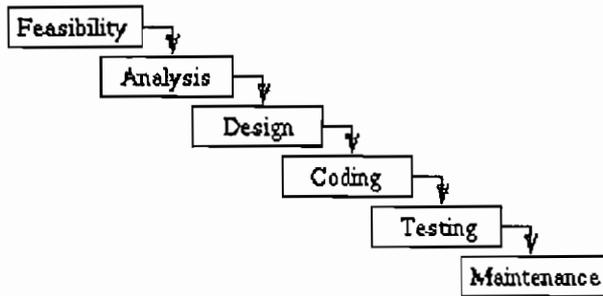


Figure 1: The Waterfall Software Life Cycle

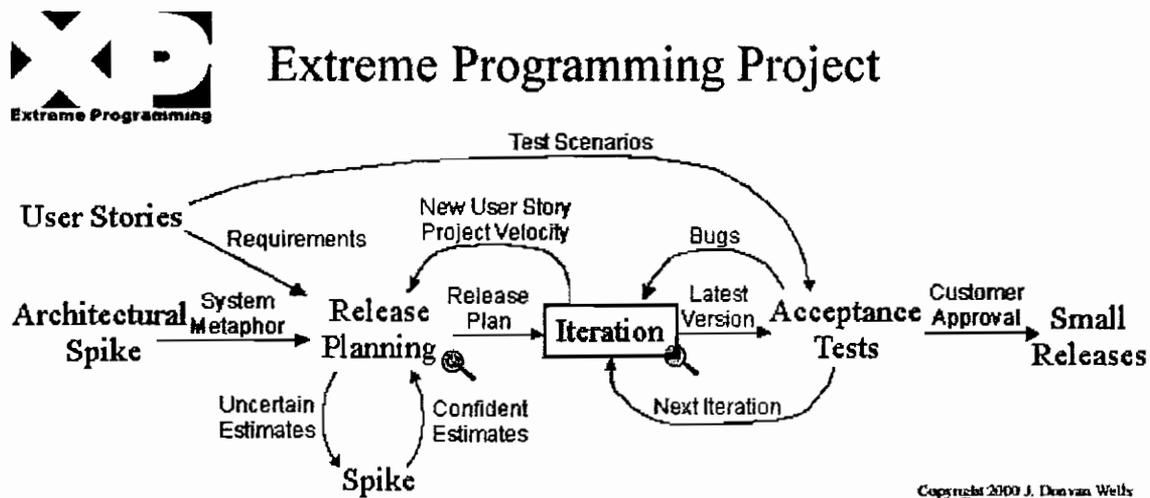


Figure 2: Extreme Programming (Source: Extreme Programming Project)

LeaderCubes™ development will involve WPAFB identifying its top five priorities for integration of existing data repositories. Their top priority has already been identified as the LiveLink records management system. The LeaderCube™ specification will entail two levels of functionality. Level one will be the specific read-write-move-delete-migration functionality and user interfaces required for all LeaderCubes. Level two will be the specific integration requirements for the data store in question, i.e., in the case of LiveLink, the specific peculiarities of integrating to LiveLink’s storage and retrieval model and APIs. We estimate that each of these cubes will require about 1000 hours of programming. Given this, a Waterfall project plan will be developed first, then approximately 500 hours into the development of a given cube, the team will transition into an Extreme Programming mode as the alpha version starts to be tested with live WPAFB data and operating environments.

Simultaneously, the platform requirements needed to run Leader2Leader™ will be acquired and installed in a suitable facility in coordination with WPAFB personnel. Leader2Leader™ alpha/beta code will be installed on this platform. WPAFB will select beta users who will be subscribed to the system and who will commence work with Leader in beta testing. As the LeaderCubes™ are developed in cooperation with appropriate WPAFB project teams, they will be implemented and tested with Leader2Leader™. WPAFB will develop appropriate configuration rules for Leader2Leader™ and for each LeaderCube™. WPAFB will also develop and implement a systems support and data migration plan for the entire system.

Leader will work with WPAFB to secure a suitable location within the WPAFB complex to implement a prototype NORAD-like Anti-terrorism Command & Control Center. This center will enable a prototype team of analysts to monitor fixed and ad hoc Leaderboards™ as well as monitor output from existing WPAFB data repositories. This prototype center will show how various teams of internal and experts can collaborate “on the fly” using disparate input and output devices (e.g., wireless, handheld, browser, phone, fax, email, edi, ftp, im) and how this cross-agency cooperation can enhance the capabilities of our security services to coordinate efforts in real time or near real time.

WPAFB requirements are in complete synergy timing-wise with Leader’s intensive R&D efforts over the preceding three years. Prior to meeting Leader, WPAFB personnel were frustrated with the existing fare. In fact, WPAFB has tried every flavor of existing solutions and find those solutions to be falling well short of expectations. Leader’s vision, products and approaches have found significant agreement with WPAFB experience and needs. And, while Leader is a relatively new company, it is staffed by industry veterans who bring world-class skill and substance to the solutions being offered to WPAFB. In addition, the additional synergy involved with the simultaneous testing of a new NORAD-like Anti-terrorism Command & Control Center gives the government significant value for the dollar.

4 Team Qualifications

The Leader team is comprised of industry veterans, experienced in every phase of the technical and organizational task at hand. The following is their experience in brief.

Leader Founder and CEO Mike McKibben, in addition to being a highly-experienced entrepreneur, re-built AT&T’s Windows messaging/enhanced fax infrastructure in the mid 1990’s, taking over a project that had been in AT&T Bell Labs’ control for 15 years. Supported AT&T’s Fortune 1000 clients and their 250+ person messaging/fax/edi sales and technical force.

CTO Brad Whiteman designed and built the Shared Data Warehouse for the Department of Defense under the Contract Management / Contract Payment Applications Development Division where he managed a staff of more than 50 people. Mr. Whiteman is a former Lieutenant in the US Navy.

Director Ed Detwiler, as Senior Vice President of Bank One, built Bank One's global data processing infrastructure with triple redundancy approximating 3,500 MIPS (millions of instructions per second) and over 30 terabytes of online data storage. He ran Bank One's 24x7x365 systems with 260 people and 99.99% production reliability. Mr. Detwiler is a US Army Vietnam Veteran.

Vice President of Engineering Jeff Lamb was a Senior Software Architect at the National Air Intelligence Center (NAIC) and is a former Captain in the US Air Force.

Michael Greulich, Vice President of Operations Support was the Chief of Systems Integration for the Defense Finance and Accounting Service responsible for the consolidation of 24 DoD data processing centers into the Mega Center and was nominated DLA Employee of the Year in 1989.

Steven Hanna, Project Manager, former Project Manager^V for Lockheed Martin and Oracle working on IMINT systems at WPAFB. 

Wayne F. Dugal, Telco Systems Architect Chief Architect, former Qwest Virtual Private Network. Mr. Dugal is a former Captain, US Army Signals Corp.

David Eaton, Oracle/ERP Architect, former senior programmer for the Defense Systems Design Center (DSDC).

Leader programmers Eric Rosenberg, Bud Budrejko, Mark Astin, and Wendy Adams were all software engineers for the National Air Intelligence Center (NAIC) and all Captains in the US Air Force except for Mr. Rosenberg who was a Lieutenant.

Karen Houser, Director of Operations, former Director of TW Recreational Services, with full responsibility for 10 state part resort hotels in Ohio and New York; former Director of Food and Beverage Management for Yellowstone National Park. Has managed up to 17 operations and 1,100 employees with budgets exceeding \$ 25million.

Other Leader Directors include:

Professor James P. Chandler, President, The National Intellectual Property Law Institute; Author of the Economic Espionage Act of 1996 & the Uniform Trade Secrets Act. Advisor to various government and military agencies on security, intelligence and intellectual property.

Major General James Freeze, US Army (ret.), former head of the US Army Security Agency; Asst. Deputy Director of NSA; author of "The Freeze Report" on WPAFB security.

Steven P. Gonzalez, Director former Vice President of AT&T for IP Services, Eastern Region, including Manhattan, the World Trade Center, and Wall Street

Other key Leader Advisors include:

William DeGenaro, former Advisor White House Director of Strategic Countermeasures Planning for Presidents Reagan and Bush; 3M Strategic Planning Director; Co-founder of The Centre for Operational Intelligence

Leonard Zawistowski, Advisor Senior Investigator, Federal Reserve Bank

University of Dayton Research Institute, Clancy Cross, Director, and Ronald L. Thomas, Senior Software Engineer, Leader's DARPA Partner -- The University of Dayton Research Institute (UDRI) staff of approximately 300 full-time engineers, scientists, and support personnel with annual revenues exceeding \$40M, provides basic and applied research for government and industry. UDRI has both a long history of IT development (see: Appendix C) and long-standing R&D relationship with numerous entities at WPAFB. Consequently, UDRI brings a solid, local-to-Dayton, support infrastructure needed to provide continuity in critical areas of this project such as training, testing, systems integration, documentation and sustainability. In addition, UDRI is intimately familiar with the administrative and security requirements at WPAFB. In a phrase, the organizational relationships between WPAFB and UDRI are longstanding.

Organizationally, the Leader team is a list of performers who have proven themselves time and again in their careers. Mike McKibben has a entrepreneurial veteran and is extremely skilled at the dynamics of start-up, infrastructure building, staffing, training, motivation, recruiting, financing, and executive oversight. Ed Detwiler joined Bank One in its early days, grew and managed its IT infrastructure into the powerhouse it is today. Brad Whiteman conceived, organized, secured funding and implemented the Shared Data Warehouse concept for the Department of Defense and is familiar with the practical and political issues involved with implementing an IT project successfully within the federal arena. Michael Greulich's skills maybe unsurpassed in federal circles, having been responsible for the consolidation of 24 DoD data processing centers in a 3 year time frame. We could say more, but I think this gives a flavor of the caliber of organization talent Leader has assembled.

With regard to the specific talents and skills of the aforementioned people, those are described in the table below.

Michael T. McKibben, CEO	Entrepreneur, leadership, vision, strategy, management, marketing, sales, investor relations, strategic relationships, product design, recruiting
Brad L. Whiteman, CTO	R&D oversight, product planning, project management, architecture, programming, technical and customer support
Jeff Lamb, VP of Engineering	R&D oversight, architecture, programming, testing, project planning
Professor James P. Chandler,	Intellectual property, security, legal

PhD, Director	strategies
Edward B. Detwiler, Director	Product design, client systems planning, 24x7 reliability, alliances, intellectual capital standards, and overcoming the negative impacts of technology on enterprise culture
Bud Budrenko, Network Architect	Programming, design, network management
Mark Astin, Systems Architect	Programming, architecture, design
Wendy Adams, Programming Architect	Programming, architecture, design
Steven Hanna, Project Manager	Project and operations management
Eric M. Rosenburg, Systems Architect	Programming, architecture, design
Stephen D. Engle, Teleco System Manager	Telecommunications architecture, recruiting
Wayne F. Dugal, Telco Systems Architect	Telecommunications architecture, programming, testing
David Eaton, Database Architect	Database architect
Michael J. Greulich, Network Infrastructure	Quality assurance, staffing, policies and procedures, project management, project support, resource allocation and research and development support
Major General James E. Freeze, US Army (ret.), Director	Corporate and data security
William DeGenaro, Advisor	Business intelligence, security, strategy
Steven P. Gonzalez, Director	Sales and marketing, strategy
Leonard Zawistowski, Advisor	Security
Clancy W. Cross, UDRI Chief	Project management, design
Ronald L. Thomas, UDRI Senior Engineer	Programming, documentation, testing, systems integration
Benjamin Zacks	Legal, contracts
Betsy Foote	Programming
Andrea Geig	Programming
Tim Fathbruckner	Programming
Bill Robertson	Programming
Kim Sanders	Programming
David McManus	Documentation, writing
Gloria Schuman	Accounting
Chris Pullins	Programming

Carrie McKibben	Clerical, record keeping, logistics
Vonda Barnhart	Clerical, accounting, logistics
Dave Harden	Programming
Andrew Barnhart	Programming
University of Dayton Research Institute	Documentation, testing, training, systems integration

Leader leases approximately 6,000 square feet of office space in Westerville, Ohio. The company manages a development server and corporate data servers at this location. The facility is secured by full intrusion detection (motion, glass breaks, door switches), including fire and smoke alarms throughout. The facility maintains a complete video surveillance capability over all critical and common areas with links to a third party monitoring company that maintains close contact with the Westerville Police Department. The facility is zoned for added security with all critical areas and executive offices having their own entry security keypad. The company also leases space for its teleconferencing production system in a third party co-location facility in Columbus and is in negotiations to acquire a third lease for co-location services from a prominent telecommunications company. In total, the company possesses in excess of \$1 million dollars of hard computer assets. These hard and soft assets would be substantially applied to the execution of this DARPA.

5 Expected Outcomes

5.1 Deliverables

- a. Leader2Leader™ software licenses for 20,000 WPAFB employees
- b. Six (6) LeaderCube™ unlimited (for internal use) software licenses with full documentation
- c. Six (6) WPAFB data repositories fully integrated into the Leader2Leader™ platform
- d. Leader2Leader™ hardware and hosting platform fully tested and operational at WPAFB
- e. WPAFB customer and technical support staff trained and in place
- f. A NORAD-like Anti-terrorism Command and Control Theater full operational in prototype form at WPAFB or other mutually suitable location.

5.2 Benefits to Client

- a. WPAFB will receive a working, integrated, scalable, flexible solution to its Records Management, Acquisitions Management, Engineering Collaboration and Knowledge Management priority projections in a time frame that is factors ahead of where WPAFB thought it could be in a 6-12 month time frame if all of these projects were let separately.
- b. DARPA will have a fully operational NORAD-like Anti-terrorism Command and Control Theater prototype from which various applications and uses can be determined – all in a very short period of time; much shorter than if all those projects were just going out to bid in the coming months.

SECTION III

Technical Information

1. Purpose

Provide a comprehensive collaborative environment that incorporates search, access and retrieval to existing data repositories as well as provide a command and control display environment for cross-department collaboration, data sharing and data storage, most specifically for anti-terrorism priorities.

2. Problems Solved

With the exception of E-mail, data sharing and collaboration is platform-specific. Cross-platform sharing of data in a dynamic collaboration environment is difficult and tends to be built to rather static, ad hoc specifications. These systems are generally not scalable. Leader2Leader™ provides the opportunity for a scalable, platform independent enterprise collaboration and communications environment with a data repository structure that can adapt to the needs of the moment without any underlying change to its core programming.

3. Technical Background

Leader2Leader™ was conceived and designed initially by Michael T. McKibben, founder of Leader Technologies. Mr. McKibben assembled a core of veteran IT professionals to complete this massive R&D project that has taken three years. Leader chose to team with UDRI to help facilitate the documentation, training, systems integration and support for this project. WPAFB has identified four priority areas in the coming years to which Leader2Leader™ can facilitate. Those areas are: records management, acquisitions management, engineering collaboration and knowledge management.

4. Operational Constraints

WPAFB will need to allocate hosting space for the Leader2Leader™ servers within its existing IT infrastructure. All other resources required to accomplish this task are already available to the participants or are included in this proposal. No obstacles are foreseen.

5. Solutions Uniquenesses

The Leader2Leader™ solution overcomes, by design, the vertical “data silo” problems that plague cross-department, cross-agency and cross-enterprise collaboration. In the past these solutions have been ad hoc, custom solutions that required heavy support. Leader2Leader™ will provide such a scalable collaboration environment and allow for the seamless integration of existing data repositories by way of the LeaderCubes™ that will be developed in this project. The underlying security model for collaboration has been re-thought in Leader2Leader™. This provides a completely ground-up rethink of

the endemic weaknesses of existing collaboration offerings. After 3 years of extensive, world-class research, Leader believes it has discovered this endemic weakness in cross-platform collaboration and has fixed it in its Leader2Leader™ platform. Leader further believes that the deficiencies in our intelligence gathering and coordination currently being publicized in glaring detail in the world press points directly to this problem which Leader has crafted a solution.

6. Technical Description of Solution

Leader2Leader™ is an applications framework that accomodates different types of content with different types of metadata to perform different operations such as add, edit, linking, versioning, storage structure, ownership and permissions. LeaderCube™ allows objects with metadata that has not be previously defined by the system (at creation) to be included in tis framework. Leader2Leader™ is an object-oriented framework that persists to a relational database.. It includes a telephony platform that talks to the global phone network and provides fax, voice mail and conference calling functionality within this framework.

7. List of Modules and Components

Leader2Leader™ is comprised of sixty (60) patents and/or patentable inventions, Seven hundred Ninety-Two (792) proprietary marks and topology, Two Thousand Eight (2008) copyrights, and Two Hundred Eighty-Eight (288) related domain names. LeaderCubes™ will be comprised of six (6) data management packages of code.

8. Functional Integration

The Leader2Leader™ product interface unifies its various components into a dynamic, unified interface that allows access to all features from a common browser interface. The LeaderCube™ components will reside on the third party data repository server and coordinate file sharing between that third party repository and the Leader2Leader™ data server functionality.

9. Status of Project Components

The conference calling component of Leader2Leader™ is tested and commercially available. The Leader2Leader™ core engine is in alpha testing. The installation of Leader2Leader™ licenses at WPAFB awaits the beta phase of Leader2Leader™ in which WPAFB will participate and awaits commencement of this DARPA. The LeaderCubes™ application modules will be developed as a part of this DARPA. The provision of documentation, testing, training and systems integration support for the Leader2Leader™ system at WPAFB awaits commencement of this proposed DARPA. The construction of a NORAD-like Anti-terrorism Command and Control Theater awaits commencement of this DARPA.

10. Quality Assurance

We use a standardized suite of tests that a programmer is required to run anytime he or she makes a change to any portion of the application. This initiates a regression test of the various application components. In addition to that, we have specific testers who test the application prior to any updates going out. These testers catch any inconsistencies in the interface or problems with the functionality. If a problem is found, the tester feeds back his or her findings to the relevant programmer who corrects the problem and retests prior to release. We use a product defect tracking system called GNATS.

11. Usability Testing

Because it is browser based, we have to worry less about user environments. We must test in various browser environments (e.g., MSIE4+ and Netscape 4+).

12. Load Testing

Automated products assist in simulating various loads on our applications. We have reviewed the product offerings of several companies who provide this kind of specialized software and have settled on LoadRunner™ by Mercury Interactive.⁶

13. Beta Testing

We provide the application to a series of customers using a variety of different use environments in order to receive useful testing information on usability, design, functionality, utility and performance. We then systematically increase the number of beta customers on a single site to provide us with application load measurements. This data allows us to identify areas of the application that are not performing optimally and allows us to improve those areas prior to release to the user community.

14. Programming Methods

We use a combination of Waterfall and Extreme Programming methodologies. Waterfall methods are use for project specification through to alpha testing. From alpha testing forward we use Extreme Programming methodologies.

⁶ Online: <http://www-heva.mercuryinteractive.com/products/loadrunner/>

15. Project Plan Management Milestones & Deliverables

This DARPA is a one-year contract with a five-year tail. All of the heavy development work will occur in the first 12 months. The ensuing 5 years of the tail will entail some hardware upgrading as well as ongoing Leader2Leader™ licensing and a support contract.

DARPA Funding Request

Prepared by Michael T. McKibben, CEO, Leader Technologies & Clancy Cross, University of Dayton

Phase 1 Project Plan, Deliverables & Use of Funds

25-Oct-01

Use of Funds

Description	Total Requested	Month (from commencement of DARPA)												Totals	
		1	2	3	4	5	6	7	8	9	10	11	12		
Leader - Cube Dev.	\$1,424,495	237,415	118,708	118,708	118,708	118,708	118,708	118,708	118,708	118,708	118,708	118,708	118,708		1,424,495
UD - Cube Dev.	\$1,350,000	225,000	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500		1,350,000
WPAFB - Platform Expenses	\$400,000	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	400,000
NORAD-like Anti-terrorism Theater expenses	\$500,000	\$500,000													500,000
Leader2Leader™ licenses	\$8,400,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	8,400,000
	\$12,074,495	\$1,695,748	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$964,541	\$733,333	\$12,074,495
Headcount															
Leader – Leader2Leader™ Installation & Support and LeaderCube™ Technical Staffing & Support		11.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	0.0	71
UD – LeaderCube™ Documentation, Training, Performance Testing, Helps, Usability Studies & Systems Integration		11.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	0.0	68
WPAFB – Platform hardware and Support		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	25
		25.2	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	2.1	164
Product Deliverables															
Leader2Leader™		Leader2 platform intallation & staging	Leader2 Leader™ beta installation	Leader2 Leader™ beta installation		Leader2 Leader™ enterprise installation									
LeaderCubes™				LeaderCube™ 1		LeaderCube™ 2	LeaderCube™ 3	LeaderCube™ 4						LeaderCubes™ 5 & 6	
NORAD-like Anti-terrorism Theater Prototype															NORAD-like Anti-terrorism Command & Control Theater prototype, fully operational

DARPA Funding Request

Prepared by Michael T. McKibben, CEO, Leader Technologies & Clancy Cross, University of Dayton

Phase 2 Project Plan, Deliverables & Use of Funds

25-Oct-01

WPAFB-UD-Leader Project Costs Worksheet

WPAFB user base =		20,000		Year						Totals		
Costs	Source	Units	Unit descriptor	Costs	Cost per unit descriptor	1	2	3	4		5	6
Leader2Leader™ licenses, term	Leader	20,000	users	\$ 35.00	/user/month	8,400,000	8,400,000	8,400,000				
Leader2Leader™ licenses, tail	Leader	20,000	users	\$ 35.00	/user/month				8,400,000	8,400,000	8,400,000	
Hardware platform & support, term	Leader	20,000	users	\$ 449,495	/system	4,949,950						
Hardware platform & support, tail	WPAFB	20,000	users	\$ 449,492	/system				449,492			
Development environment	Leader	1	system	\$ 75,000	/system	75,000	15,000	15,000	15,000	15,000	15,000	
NORAD-like Command & Control Theater prototype						75,000						
Internal Bandwidth	WPAFB				No net change							
External Bandwidth	WPAFB				No net change							
Facilities & Management	WPAFB	200	square footage	\$ 500	/square foot/year	100,000	100,000	100,000	100,000	100,000	100,000	
LeaderCube™ Development	Leader	6	db silo cubes	\$ 150,000	/cube	900,000	180,000	180,000	180,000	180,000	180,000	
LeaderCube™ Documentation, Training & Help	Univ. of Dayton	6	db silo cubes	\$ 41,667	/cube	250,000						
LeaderCube™ Performance Testing	Univ. of Dayton	6	db silo cubes	\$ 83,333	/cube	500,000						
LeaderCube™ System Integration	Univ. of Dayton	6	db silo cubes	\$ 83,333	/cube	500,000						
WPAFB Metrics Studies	Univ. of Dayton	3	years	\$ 100,000	/year	300,000	100,000	100,000				
NORAD-like Command & Control Theater facility	WPAFB	2,000	square footage	\$ 25	/square foot/year	50,000						
WPAFB Leader2Leader™ internal help desk	WPAFB	1.25	years/year	\$ 120,000	/person/year	150,000	150,000	150,000	150,000	150,000	150,000	
WPAFB LeaderCube™ internal technical support	WPAFB	1.25	years/year	\$ 120,000	/person/year	150,000	150,000	150,000	150,000	150,000	150,000	
Total R&D Costs						12,074,495	8,695,000	8,695,000	9,144,492	8,695,000	8,695,000	55,998,987

SECTION IV

Capabilities

1. Facilities

All of the parties involved with this proposal current possess facilities and equipment sufficient to carry out this project.

Leader Facilities:

Corporate Headquarters
Spectrum Commerce Center
921 Eastwind Drive, Suite 118
Westerville, Ohio 43081
(614) 890-1986

University of Dayton Research Institute Facilities
Research Institute Web Development Center
Dayton, OH 45469-0151
937-229-3273

Wright Patterson Air Force Base
2435 5th Street
WPAFB-OH 45433-7802
937-904-5103

2. Experience

Leader personnel have collectively engaged in projects of significantly greater size and scope than this DARPA project. Leader personnel are proven performers. For example, Michael T. McKibben re-built AT&T's entire Windows messaging infrastructure, from scratch in 1/4th the time and 1/6th the cost of what AT&T Bell Labs was going to charge its own AT&T business unit.

Michael Greulich was charged with consolidating 24 DoD data processing centers into a Columbus Mega-center. He did so with skill and finesse. He achieved this goal by a masterful blend of technical savvy as well as cultural savvy. He was able to convince the personnel at those 24 DoD data processing centers to help him in this effort even though these same people would be out of a job as soon as their task was finished.

Ed Detwiler built and maintained three redundant data centers for Bank One, the fourth largest banking system in the United States.

Brad Whiteman solved an enormous headache for the Department of Defense in devising a way to have real-time or near-real-time contracting data available online. This was especially difficult when many of the data systems housing this data resided on batch-

processed mainframes. Mr. Whiteman successfully conceived of, planned, secured funding, built and managed the Shared Data Warehouse for the Department of Defense before coming to Leader.

Jeff Lamb was a highly-recruited Java programming expert whom the Air Force parked at the National Air Intelligence Center. There Mr. Lamb worked on system functionality streamlining and upgrades to current systems.

Steve Gonzalez is a former Sales Vice President of AT&T literally built from scratch a 150+ man electronic commerce sales force for AT&T. This sales force was highly profitable before being folded into AT&T's overall Internet strategy at which time Mr. Gonzalaz was assigned to head up IP Service sales for the entire Eastern Region, Manhattan and the Financial District.

Professor Chandler consults regularly with business, commerce, judicial, government and educational leaders across the United States and around the world. Many consider him the world's foremost expert on intellectual property and intelligence matters. He established the intellectual property curriculum at George Washington University and helped the Patent & Trademark Office establish their Computer & Software Division. He authored the Uniform Trade Secrets Act and the Economic Espionage Act of 1996.

Major General James Freeze, US Army (ret.) led the US Army Security Agency and was Asst. Deputy Director of the National Security Agency. After retiring from the Army, General Freeze was hired by the Department of Energy to perform a thorough security review for the DEO, a seminal work known as "The Freeze Report."

The preceding discussion gives a flavor of the caliber and capability of the talent that Leader has assembled.

The University of Dayton Research Institute staff of approximately 300 full-time engineers, scientists, and support personnel with annual revenues exceeding \$40M, provides basic and applied research for government and industry. UDRI has both a long history of IT development and long-standing R&D relationship with numerous entities at WPAFB. Consequently, UDRI brings a solid, local-to-Dayton, support infrastructure needed to provide continuity in critical areas of this project such as training, testing, systems integration, documentation and sustainability. In addition, UDRI is intimately familiar with the administrative and security requirements at WPAFB. In a phrase, the organizational relationships between WPAFB and UDRI are longstanding.

3. Personnel

- a. Michael T. McKibben, Chairman & CEO -- Mike McKibben founded Leader Technologies LLC in 1997 to develop and market Leadership Software™ as a new Leadership application network suite. The first commercial release of a component of this suite is the LeaderPhone™ Teleconferencing Service. Previously, as Founder and CEO of Planning Works, Inc. he led the rapid redevelopment of AT&T's flagship

unified messaging software AT&T AccessPlus on all Microsoft Windows platforms in close cooperation with AT&T Bell Labs and multiple AT&T messaging and Internet business units. He has also designed and built software applications for decision support, knowledge management, executive information, personal information management, and personal digital assistants on various platforms. Before transforming his consulting practice into software development, Mr. McKibben spent over ten years as a strategic management and productivity consultant with clients such as IBM, NCR, AT&T, Gillette, PaineWebber, The Bank Administration Institute, The Ohio State University, Chemical Abstracts, National Aerospace Plane Project, and Lennox Industries. He is a graduate in engineering from The Ohio State University and has authored numerous books and publications on leadership and management. Mr. McKibben's Leader responsibilities are company vision, strategy, strategic relationships, marketing and sales, investor relations, product design, and recruiting.

- b. James P. Chandler, PhD, Director -- Professor Chandler is a leading figure and scholar in intellectual property law and in the protection of United States national and economic security. He is the President of The National Intellectual Property Law Institute (www.nipli.org), Emeritus Professor of Law at the George Washington University, and Chairman of The Chandler Law Firm Chartered. Prof. Chandler has been an intellectual property scholar for more than 20 years and has delivered hundreds of speeches and papers on the topic. An example of Prof. Chandler's work can be read online at the Minnesota Intellectual Property Review. The Science and Technology Section of the American Bar Association and the Computer Law Association of America owe their founding, in part, to Prof. Chandler. He authored The Economic Espionage Act of 1996 (EEA) and co-authored the Uniform Trade Secrets Act. He has been a chief intellectual property advisor to 225 jurisdictions internationally as well as numerous Fortune 500 companies. Prof. Chandler's Leader responsibilities focus on all issues surrounding intellectual property and related security matters.
- c. Major General James E. Freeze (ret.), Director -- Major General Freeze was formerly head of the US Army Security Agency and Deputy Directory of the National Security Agency. His speciality is cryptography. He recently conducted a full security audit for the Department of Energy. His responsibilities as a Leader Director are to head the Security Committee focused on corporate and data security and privacy.
- d. Brad Whiteman, Chief Technology Officer -- Brad Whiteman joined Leader in 1999. Mr. Whiteman conceived of, designed and developed the Shared Data Warehouse (SDW) for the Department of Defense, one of the first large-scale implementations of cross-functional data sharing across an enterprise. SDW is the Department of Defense's key to platform modernization. This client server OLTP/ OLAP/ MDDB system bridges to legacy systems and allows all branches of the Department of Defense to have real-time access to procurement, contract management, E-commerce, finance and accounting applications data interactively. It manages approximately 13.9 million disbursements annually and 1.5 million transactions and queries daily on

\$855 billion in total contracts. Mr. Whiteman has managed major supplier relationships with Sun, HP, Oracle, Transarc, IBM, Cognos, Informix, Sybase, Red Brick, Microsoft, Cincom and StorageTek. Mr. Whiteman graduated from the University of Iowa. His Leader responsibilities are research and development, product planning, architecture, programming, technical support and customer support.

- e. Jeff R. Lamb, Java Architect, Leader Vice President of Engineering, CEO of Computer Wizards Consulting LLC, a Leader subsidiary -- Jeff Lamb is the Founder and CEO of Computer Wizards Consulting and began work with the Computer Wizards development team on Leader projects in 1999. Mr. Lamb, a Sun-certified Java Programmer and highly experienced in Microsoft platforms, has been programming in Java since its initial version 0.6 beta release in late winter of 1996. Other than a handful of people at Sun Microsystems, nobody is more knowledgeable and experienced in Java than Mr. Lamb. In addition to Java experience, Mr. Lamb has years of hands-on experience in databases, software design and engineering, e-commerce, and web-enabling technologies. Jeff has completed a variety of projects for clients including: NCR, The New York Public Library, The National Air Intelligence Center, Witt Plastics, TPIC, InterPersonal Computing, Excellence in Motivation, Digital Controls, Electronic Frontiers, and many others. Mr. Lamb graduated from the University of Illinois. Mr. Lamb's firm, Computer Wizards Consulting, recently became a wholly-owned, independently-operated Leader subsidiary. His Leader responsibilities include web technologies, architecture, programming, and testing.
- f. Edward B. Detwiler, Director -- Ed Detwiler was most recently Senior Vice President of Data Center Operations for Bank One Corporation. He managed an annual budget of \$92 million with a capital budget of \$42 million. During his tenure Bank One doubled in size every two to three years. His data centers process 200 million online transactions daily using 3,500 MIPS (million instructions per second) and 30 terabytes (a terabyte of information is the equivalent of 250 million pages of text) of disk storage. He was responsible for the 24x7 management of Bank One's global data and network operations. Previous to his twenty years at Bank One, Mr. Detwiler held management positions at Rockwell International, Harris Corporation, and Mohawk Data Sciences. Mr. Detwiler holds a Bachelor of Science in Industrial Management from Franklin University and an MBA from Capital University. His Leader responsibilities include product design, client systems planning, 24x7 reliability, alliances, intellectual capital standards, and overcoming the negative impacts of technology on enterprise culture.
- g. Michael J. Greulich, VP of Operations - Michael Greulich is a co-founder of Leader. He is a highly-honored former information technology senior executive, programmer and systems integrator in multi-tiered, internationally networked computer systems. Nominated Defense Logistics Agency Employee of the Year in 1989, he was Chief of Systems Integration in consolidating 24 government data processing systems into a single MegaCenter. This system currently processes \$86 billion per year in transactions. Mr. Greulich has managed several thousands technology employees at a

time and has overseen the work of information technology companies such as IBM, AT&T, Computer Associates, Compuware, Amdahl, Oracle, EDS and SAIC. He is a graduate of Gannon University. His Leader responsibilities include quality assurance, staffing, policies and procedures, project management, project support, resource allocation and research and development support.

- h. Benjamin S. Zacks, Vice Chairman & CLO -- Ben Zacks is a co-founder of Leader. He is a business attorney specializing in entrepreneurial law, real estate, intellectual property, company strategy and organization and contract law. His professional associations include the American Bar Association, the Ohio Bar Association, Arizona State Bar Association and the Commercial Finance Association and various other organizations. He holds degrees and honors from The Ohio State University and Capital University Law School. His Leader responsibilities are finance, strategy, securities, negotiations, contracts, employment agreements, copyrights, trademarks, branding and intellectual property.
- i. Karen Houser, Director of Operations -- Karen Houser joined Leader in early 2000. Formerly she was Director of Operations for TW Recreational Services, with full responsibility for ten state park resort hotels in the states of Ohio and New York. Prior to that she spent eight years as Director of Food and Beverage for Yellowstone National Park. In that capacity she managed 17 operations, more than 1,100 employees and budgets exceeding \$25 million. She is an expert at budgeting, forecasting, cost control, customer service, human resources and managing employees toward exceeding corporate goals. Her Leader responsibilities include investor relations, investment processing, human resources and all office administration.
- j. Steve E. Hanna, Leader Vice President, President of Computer Wizards Consulting LLC, a Leader subsidiary -- Steve Hanna joined the Leader team in the Fall of 2000. Mr. Hanna brings 20 years of experience in the areas of project/program management and systems engineering. Steve has spent the majority of his career supporting classified programs for a number of federal organizations and the Department of Defense. During his 18+ years with Lockheed Martin, Mr. Hanna supported both space and ground programs, developing and implementing key technologies within the United States intelligence community. Steve's background includes design, development, and operational phases of large scale, national and international programs. Prior to joining Leader, Steve helped to establish Oracle's Advanced Programs Group for supporting the National Air Intelligence Agency located at WrightPatterson AFB, Ohio. His Leader responsibilities include project and operations management.
- k. Wayne F. Dugal, Network Architect -- Wayne Dugal joined Leader in 1999. Mr. Dugal was a primary architect responsible for design, implementation and management of Qwest's Intelligent Network (IN) and was routinely recognized as one of the top performers in Qwest Network Engineering Department . Prior to Qwest/LCI, Mr. Dugal was a Captain in the U.S. Army Signal Corps where he

designed and implemented telecommunications networks including the Army Forces telecommunications network in Somalia. and was selected to teach electrical engineering at the United State Military Academy. Mr. Dugal holds multiple degrees in electrical engineering from Purdue University and the University of Illinois. His Leader responsibilities include architecture, programming and testing.

- l. David Eaton, Database Architect -- David Eaton joined Leader in 1999. Mr. Eaton has been chief architect on numerous large-scale Fortune 1000 and government databases and ERP systems. Mr. Eaton's Leader responsibilities include architecture, programming and testing.
- m. William (Bill) DeGenaro, Strategy Advisor -- Bill DeGenaro is President of DeGenaro & Associates, a business intelligence services firm. He was the Director of Business Research & Analysis for 3M Company. He also served 3M Company as Director of Innovation Resources and Strategic Planning Director. He served the White House as Director of Strategic Countermeasures Planning under Presidents Reagan and Bush. Mr. DeGenaro is the co-founder and principle of The Centre for Operational Business Intelligence and he is a Fellow and Director of the Society of Competitive Intelligence. He holds a management degree from the University of Illinois and advanced degrees from Harvard University, Columbia University, the Joint Military Intelligence College, and the University of Minnesota. His Leader responsibilities include business intelligence, security and strategic planning.
- n. Stephen D. Engle, Manager of Telecommunications Services, CEO of Millennium Worldwide Consulting LLC, a Leader subsidiary
Steve brings a decade of experience in the telecommunications industry. Steve spent seven years with LCI International (now Qwest Communications International). At LCI, Steve worked in Customer Service, Business & Technology Development, Strategic Applications Implementation, Infrastructure Program Management, Product Development, and Engineering Operations. He led the Strategic Applications Implementation and Infrastructure Program Management teams for Qwest; efforts that focused on large-scale development efforts for key customer application, internal platforms and network infrastructure, and back-office integration. Mr. Engle has a Bachelor of Science in Telecommunications from Ohio University. He co-founded Millennium Worldwide Consulting LLC in 1998. Millennium supplies telecommunications and data network professionals on contract and outsourced bases to the high tech industry. Millennium recently became a wholly-owned, independently-operated Leader subsidiary. His Leader responsibilities include telecommunications architecture and recruiting.
- o. Tina M. Giustino, Manager of Human Resources, COO of Millennium Worldwide Consulting LLC, a Leader subsidiary
Tina is a human resources and recruiting specialist and has worked at such companies as Sterling Commerce, The Limited, and Checkfree Corporation. She is experienced with all levels of human resource management from entry-level customer service to HR management and high-tech recruiting. Tina built cutting-edge recruiting and

administrative teams and processes for Sterling Commerce and Checkfree Corporation. Ms. Giustino has a Bachelor of Arts in Human Resources from Ohio University. She co-founded Millennium Worldwide Consulting LLC in 1998. Millennium supplies telecommunications and data network professionals on contract and outsourced bases to the high tech industry. Millennium recently became a wholly-owned, independently-operated Leader subsidiary. Her Leader responsibilities include recruiting and human resources management.

- p. Steven P. Gonzalez, Director -- Mr. Gonzalez was formerly a Sales Vice President for AT&T Global Services in charge of the Eastern Region. He was responsible for leading the data and IP network sales efforts in the Northeastern United States, including Manhattan and the Financial District; Mr. Gonzalez managed in excess of \$4 billion in annual revenues.
- q. Leonard Zawistowski, Advisor -- Senior Investigator for the Federal Reserve Bank. His specialty is financial and banking systems and fraud. His Leader responsibilities are focused on financial and banking systems, data security and privacy.
- r. Bud Budrejko, Network Architect – Formerly an Imagery Exploitation Systems Engineer for the National Air Intelligence Center (NAIC) at WPAFB responsible for a variety of system and platforms for NAIC.
- s. Mark Astin, Senior Programmer – Formerly Systems Analysis Officer for the Flight Commander, Information Systems Flight at WPAFB; commanded 62 military and civilian personnel providing base-wide network management and system administration for all aspects of information protection.
- t. Eric Rosenberg, Senior Architect – Former Systems Development Engineer and US Air Force Captain at the National Air Intelligence Center, WPAFB, responsible for customized applications for an internal customer base of 150+ imagery-reconnaissance personnel.

4. Legal Issues

a. Personal Property

All tangible personal property produced or acquired under this DARPA shall become the property of the Participant or the Government depending upon whose funds were used to obtain it. Personal Property shall be disposed of as directed by the owner at the owner's expense. .

b. Obligations as to Proprietary Information

- a. If Proprietary Information is orally disclosed to a Party, it shall be identified as such, orally, at the time of disclosure and confirmed in a written summary thereof,

appropriately marked by the disclosing party, within thirty (30) days as being Proprietary Information.

- b. Each Party agrees to not disclose Proprietary Information provided by another Party to anyone other than the DARPA Participant and WPAFB without written approval of the providing Party, except to Government employees who are subject to the statutory provisions against disclosure of confidential information set forth in the Trade Secrets Act (18 USC 1905) and (18 USC 1831 *et seq.*(1996)).
- b. All Proprietary Information shall be returned to the provider thereof at the conclusion of this DARPA at the provider's expense.
- c. All Proprietary Information shall be protected for a period of five (5) years unless and until such Proprietary Information: (1) shall become publicly know without the fault of the recipient, (2) shall come into recipient's possession without breach of any of the obligations set forth herein by the recipient, or (3) shall be independently developed by recipient's employees who did not have access to such Proprietary Information. Nothing herein is intended to be a waiver by the Participant or DARPA of the applicability of the Federal Trade Secrets Law (18 USC 1831 *et seq.*).

5. Obligations as to Protected DARPA Information

- a. Each Party may designate and so mark as Protected DARPA Information, as defined in 4.2 any Generated Information produced by its employees, and with the agreement of the other Party, designate any Generated Information produced by the other Party's employees. All such designated Protected DARPA Information shall be appropriately marked.
- b. For a period of three (3) years from the date Protected DARPA Information is produced, the Parties agree not to further disclose such Information except:
 - ii. as necessary to perform this DARPA;
 - iii. as provided in Article XI;
 - iv. as requested in writing by the Contracting Officer to be provided to other military facilities for use only at those military facilities with the same protection in place;
 - v. to existing or potential licensees, affiliates, customers or suppliers of the Parties in support of commercialization of the technology with the same protection in place. Disclosure of Participant's Protected DARPA Information under this subparagraph shall only be done with Participant's consent; or
 - vi. as mutually agreed in writing by the Parties in advance.

- c. The obligations of Paragraph b (above) shall end sooner for any Protected DARPA Information which shall: (1) become publicly known without fault of either Party, (2) shall come into a Party's possession without breach by that Party of the obligations of Paragraph b (above), or (3) shall be independently developed by a Party's employees who did not have access to the Protected DARPA Information.

6. Rights in Generated Information

The Parties agree that they shall have no obligations of non-disclosure or limitations on their use of, and the Government shall have unlimited rights in, all Generated Information, all Protected DARPA Information after the expiration of the period set forth above and information provided to the Government under this DARPA which is not marked as being copyrighted or as Protected DARPA Information or Proprietary Information, or which is not an invention disclosure which may later be the subject of a U.S. or foreign patent application.

7. Copyrights

- a. The Parties may assert copyright in any of their Generated Information. Assertion of copyright generally means to enforce or give any indication of an intent or right to enforce such as by marking or securing Federal registration.
- b. All copyrights of the Participant and DARPA to original information for which authorship takes place during the performance of work under this DARPA shall be licensed as agreed among the parties, subject to any obligation of protection as delineated herein.
- c. For Generated Information, the Parties acknowledge that the Government has for itself and others acting on its behalf, a royalty-free, non-transferable, non-exclusive, irrevocable, worldwide copyright license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government, all copyrightable works produced in the performance of this DARPA, subject to the restrictions this DARPA places on publication of Proprietary Information and Protected DARPA Information.
- d. DARPA and the Participant agree that, with respect to any copyrighted computer software produced in the performance of this DARPA, WPAFB has the right, at the end of the period set forth in Article VIII, Paragraph B hereof and at the end of each two-year interval thereafter, to request DARPA and the Participant and any assignee or exclusive licensee of the copyrighted software to grant a non-exclusive, partially exclusive, or exclusive license to a responsible applicant upon terms that are reasonable under the circumstances, provided such grant to WPAFB not cause a termination of any licensee's right to use the copyrighted computer software. If DARPA or the Participant or any assignee or exclusive licensee refuses such request,

DARPA and the Participant agree that WPAFB has the right to grant the license if WPAFB determines that DARPA and the Participant, assignee, or licensee has not made a satisfactory demonstration that it is actively pursuing commercialization of the copyrighted computer software.

Before requiring licensing under the terms above, WPAFB shall furnish to DARPA/Participant written notice of its intentions to require DARPA/ Participant to grant the stated license, and DARPA/Participant shall be allowed thirty (30) days (or such longer period as may be authorized by the cognizant WPAFB Contracting Officer for good cause shown in writing by DARPA/Participant) after such notice to show cause why the license should not be required to be granted.

- e. DARPA/Participant shall have the right to appeal the decision by the WPAFB to the grant of the stated license to the Invention Licensing Appeal Board as set forth in Paragraphs (b) - (g) of 10 CFR 781.65, "Appeals".
- f. The Parties agree to place Copyright and other notices, as appropriate for the protection of copyright, in human readable form onto all physical media, and in digitally encoded form in the header of machine readable information recorded on such media such that the notice will appear in human readable form when the digital data are off-loaded or the data are accessed for display or printout.

8. Reporting Subject Inventions

- a. The Parties agree to disclose to each other each and every Subject Invention, which may be patentable or otherwise protectable under the Patent Act. The Parties acknowledge that DARPA and Participant will disclose their respective Subject Inventions to WPAFB within two (2) months after the inventor first discloses the invention in writing to the person(s) responsible for patent matters of the disclosing Party.
- b. These disclosures should be in sufficiently complete technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose and operation of the Subject Invention. The disclosure shall also identify any known actual or potential statutory bars (i.e., printed publications describing the Subject Invention or the public use or on sale of the Subject Invention in this country). The Parties further agree to disclose to each other any subsequent known actual or potential statutory bar that occurs for a Subject Invention disclosed but for which a patent application has not been filed. All Subject Invention disclosures shall be marked as confidential under 35 USC 205.

9. Title to Subject Inventions

Whereas the Participant and DARPA have been granted the right to elect to retain title to Subject Inventions,

- a. Each Party shall have the first option to elect to retain title to any Subject Invention made by its employees and said election shall be made: (1) for the Participant within twelve (12) months of disclosure of the Subject Invention to WPAFB, or (2) for DARPA within the time period specified in its prime contract for electing to retain title to Subject Inventions. If a Party elects not to retain title to any Subject Invention of its employees, then the other Party shall have the second option to elect to retain title to such Subject Invention. For Subject Inventions conceived or first actually reduced to practice under this DARPA which are joint Subject Inventions made by DARPA and the Participant, title to such inventions shall be jointly owned by DARPA and the Participant. The WPAFB shall retain title to any invention which is not retained by any Party.
- b. The Parties acknowledge that the WPAFB may obtain title to each Subject Invention reported for which a patent application or applications are not filed and for which any issued patents are not maintained by any Party to this DARPA.
- c. The Parties acknowledge that the Government retains a non-exclusive, non-transferable, irrevocable, paid-up license to practice or to have practiced for or on behalf of the United States every Subject Invention under this DARPA throughout the world.

10. Filing Patent Applications

- a. The Parties agree that the Party initially indicated as having an ownership interest in any Subject Inventions (Inventing Party) shall have the first opportunity to file U.S. and foreign patent applications. If the Participant does not file such applications within one (1) year after election, or if DARPA does not file such applications within the filing time specified in its prime contract, then the other Party to this DARPA exercising an option pursuant to Article XV may file patent applications on such Subject Inventions. If a patent application is filed by the other Party (Filing Party), the inventing Party shall reasonably cooperate and assist the Filing Party, at the Filing Party's expense, in executing a written assignment of the Subject Invention to the Filing Party and in otherwise perfecting the patent application, and the Filing Party shall have the right to control the prosecution of the patent application. The Parties shall agree between themselves as to who will file patent applications on any joint Subject Invention.
- b. The Parties agree that DARPA has the right to file patent applications in any country if neither Party desires to file a patent application for any Subject Invention. Notification of such negative intent shall be made in writing to the Contracting Officer within three (3) months of the decision of the non-inventing party to not file

a patent application for the Subject Invention pursuant to Article XV or not later than sixty (60) days prior to the time when any statutory bar might foreclose filing of a U.S. patent application.

11. Trademarks

The Parties may seek to obtain Trademark protection on products or services generated under this Agreement in the United States or foreign countries. The Party originating the Trademark/Service Mark on products or services generated under this DARPA in the United States or foreign countries, shall have the entire right, title, and interest in/to such marks subject to the Government retained rights set forth hereinafter. The Parties hereby acknowledge that the Government shall have the right to indicate on any similar goods or services produced by or for the Government, that such goods or services were derived from and are a WPAFB version of the goods or services protected by such Trademark/Service Mark with the Trademark and the owner thereof being specifically identified. In addition, the Government shall have the right to use such Trademark/Service Mark in print or communications media.

12. Mask Works

The Parties may seek to obtain legal protection for Mask Works fixed in semiconductor products generated under this Agreement as provided by Chapter 9 of Title 17 of the United States Code. Each Party shall have the first option to assert rights to Mask Works made solely by its employees. If a Party elects not to assert rights to a Mask Work made solely by its employees or made in connection with the other Party to this DARPA, then the other Party shall have the option to elect to assert rights to such Mask Works. The Parties hereby acknowledge that the Government or others acting on its behalf shall retain a non-exclusive, paid-up, worldwide, irrevocable, non-transferable license to reproduce, import, or distribute the covered semiconductor product by or on behalf of the Government, and to reproduce and use the Mask Work by or on behalf of the Government.

13. Cost of Intellectual Property Protection

Each Party shall be responsible for payment of all costs relating to copyright, Trademark, and Mask Work filing, U.S. and foreign patent application filing and prosecution, and all costs relating to maintenance fees for U.S. and foreign patents hereunder which are solely owned by that Party. Government/WPAFB laboratory funds contributed as WPAFB's cost share to a DARPA cannot be given to Participant for payment of Participant's costs of filing and maintaining patents or filings for Copyrights, Trademarks, and Mask Works.

14. Reports of Intellectual Property Use

Participant agrees to submit, for a period of three (3) years and upon request of WPAFB, a non-proprietary report no more frequently than annually on the efforts to utilize any Intellectual Property arising under this DARPA.

15. Budget

The budgetary requirements of this project are largely in technical personnel. It is believed that headcount is the best way to benchmark budget requirements. Therefore, administrative overhead is loaded into the headcount. A fully loaded cost of \$125 per programmer per hour, inclusive of all operating costs for that person, has been used for Leader and University of Dayton personnel. A fully loaded cost of \$100 per person per hour was used for WPAFB personnel.

The project is divided into two phases. Phase One is the initial 12 month phase in which all R&D will take place and where the R&D expenses will take place. Phase Two is the ensuing 5-year period following the first year. It reflects mostly ongoing licensing costs for the Leader2Leader™ system and hardware replacement after the first three year period.

See Pages 19-22 for the Budget Spreadsheets.

16. Notices

Any communications required for this DARPA, shall use the following addresses, telephone numbers and fax numbers as follows:

LEADER TECHNOLOGIES LLC

Attn: Michael T. McKibben
921 Eastwind Drive, Suite 118
Westerville, Ohio 43081
Tel: (614) 890-1986
Fax: (614) 864-7922
mmckibben@leader.com

UNIVERSITY OF DAYTON RESEARCH INSTITUTE

Attn: Clancy M. Cross
UDRI Web Development Center
Tel: (937) 229-3273
Fax: (937) 229-3433 (fax)
cross@udri.udayton.edu

Appendix A

WPAFB Cost Displacement Analyses

Mr. Fleser at WPAFB requested a Leader2Leader™ cost displacement analysis. Specifically, he wished to see an analysis of the range of existing WPAFB operational costs that would be displaced, replaced, reduced or eliminated completely by a full Leader2Leader™ implementation. By way of summary, an analysis of the tangible cost displacements alone (using drastically conservative estimates) yielded an cumulated net savings of \$266,452,266, a 513% ROI over the six year term of the DARPA, Phases 1 and 2. If one were to add more aggressive cost displacement figures and improved performance impacts from the intangible values (i.e., better focus on the mission, improved leadership communications, better inter-agency coordination, etc.) the ROI could have easily been 1,000-2,000%.

Cost displacement								
50% fewer Fax Machines (displaced by LeaderFax™)	200 machines	\$1,000 achine	200,000	200,000	200,000	200,000	200,000	200,000
Fewer paper-based Assessments, Evaluation & Survey Instruments (replaced by LeaderVote™)	20,000sers	\$30 ser/year	600,000	600,000	600,000	600,000	600,000	600,000
Fewer Directory Management Resources needed and reduced errors and ommissions in employee-related datakeeping (displaced by LeaderMyProfile™)	20,000sers	\$110 ser/year	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000
Savings of Wasted Time in Meetings from poor documentation, preparation, background and source material distribution, reviewing minutes, etc. (reduced by LeaderMeeting™)	20,000sers	ours/week/ 0.25ser	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Savings by not having to recover from MS Outlook Targeted Viruses (eliminated by LeaderMail™)	20,000sers	\$ 20 ser/year	400,000	400,000	400,000	400,000	400,000	400,000

Savings from Non-proliferation of E-mail Attachments to distribution lists (eliminated by LeaderMail™ - less storage)	20,000sers	\$281,875 ystem/year	281,875	281,875	281,875	281,875	281,875	281,875	281,875
Savings in Phone Conferencing costs (replaced by LeaderPhone™ and LeaderMeeting™)	20,000sers	\$2,250,000 ystem/year	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000
Savings in Travel Time costs (replaced by the virtual meeting capacities of LeaderPhone™ and LeaderMeeting™)	20,000sers	ours/user/ 16 ar	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000
Savings in Document Searching & Finding (replaces time spent in manual and silo searches by LeaderFind™)	20,000sers	our/week/ 0.25ser	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Savings by reducing the time now spent Scanning and Deleting Superfluous Email (reduced with LeaderMail™)	20,000sers	ours/week/ 0.43ser	8,598,333	8,598,333	8,598,333	8,598,333	8,598,333	8,598,333	8,598,333
Savings by reducing the time now spent in Superfluous Browsing (reduced by LeaderFind™)	20,000sers	ours/week/ 0.25ser	5,025,000	5,025,000	5,025,000	5,025,000	5,025,000	5,025,000	5,025,000
Reduce Exchange Server Licensing Costs in migration from Exchange Mail to LeaderMail™)	20,000sers	\$50 ser		200,000	400,000	600,000	800,000		
Reduced costs for MS Project (reduced by LeaderTask™)	4,000sers	\$50 ser		40,000	80,000	120,000	160,000		
Savings and efficiencies in Organizational Re-structuring Costs and re-distribution of intellectual capital (facilitated by Digital Leaderboards™ and LeaderWebs™)	2,000 anagers	ours/user/ 4 ar	320,000	320,000	320,000	320,000	320,000	320,000	320,000
Reduce Client-side Software maintenance (because Leader2Leader™ is simple browser based)	20,000sers	ours/user/ 1 ar	800,000	800,000	800,000	800,000	800,000	800,000	800,000

<p>Reduced costs due to Thin Client Configuration (maintenance, support, upgrades, lower hardware replacement costs, supports handheld devices, network computers, eliminates need for software distribution, time savings dealing with end user - the server-centric LeaderAppliance™ does all the heavy lifting)</p>	20,000sers							
<p>Reduced costs associated with the system's real-time support of Management Priorities and Initiatives (facilitated by Digital Leaderboards™ and LeaderWebs™)</p>	20,000sers							
<p>Enterprise, Directorate, Group & Individual Productivity Gains associated with system's support of enterprise's strategic priorities (facilitated by LeaderWebs™)</p>	20,000sers							
<p>Reduced dependence on MS Office Suite & Application packages; vendor independence allows us to support all major office suites (e.g. Sun StarOffice, Corel Office Suite, Lotus SmartSuite)</p>	20,000sers							
<p>Reduced costs for transfer of knowledge i.e. Training Replacement Personnel, Lost Opportunity Costs, Knowledge Management Losses, and General Training Costs due to fingertip accessibility of Leaderboard information(facilitated by Digital Leaderboards™ and LeaderWebs™)</p>	20,000sers							
<p>Reduced costs and increased customer service due to Availability of Local Ohio Support via the Leader team and University of Dayton personnel).</p>	20,000sers							

Improved future system Spending Decision Support due to the knowledge base developed within Leader and University of Dayton.	20,000sers							
	Total Costs Displaced	53,275,208	53,715,208	53,755,208	53,995,208	54,435,208	53,275,208	322,451,250
	Net Savings (\$)	1,200,713	5,020,208	5,060,208	4,850,716	5,740,208	4,580,208	266,452,263
	ROI	341%	518%	518%	490%	526%	513%	476%
	Cumulative Net Savings	1,200,713	6,220,922	11,281,130	16,131,846	21,872,055	66,452,263	

Appendix A, continued

Spreadsheet Comments:

Costs Spreadsheet Comments

Leader2Leader™™ licenses -- Cost covers support, normal upgrades, new versions (but, not WPAFB requested enhancements that are over and above normal customer requests.)

Hardware platform & support – Covered for the first three years by the DARPA financing; to be picked up by WPAFB in years 4-6.

Development environment – A mirror of the WPAFB configuration for a Leader development and testing environment.

Internal Bandwidth – inside the WPAFB intranet.

External Bandwidth – links to all external networks.

Facilities Management – WPAFB provisioning of fully loaded data center costs incl. UPS, physical security, sf, management, HVAC, etc.

LeaderCube™ Development – design and development of 6 ties between Leader2Leader™™ and existing WPAFB data silos; one cube known is for LiveLink by OpenText.

LeaderCube™ Documentation, Training & Help -- Written and online documentation, training media development and implementation.

LeaderCube™ Performance Testing -- Initial capacity and performance evaluation; bottleneck elimination; final configuration refinement; storage/archiving policies.

LeaderCube™ Systems Integration -- Assist in the design of the integration approach; testing of the integrated system; implementation, installation of the integrated system.

WPAFB Metrics Studies – performance and usage studies to evaluate true costs of ownership and use as well as numerous collaboration statistics that correlate system usage with strategic objectives fulfillment.

Cost Displacement Spreadsheet Comments

Fax Machines – 50% fewer fax machines needed because incoming faxes will go right to appropriate Digital Leaderboards™. Assume a fully-loaded cost over the life of the machine, incl. maintenance at \$1000. (displaced by LeaderFax™)

Assessments, Evaluations & Survey Instruments – LeaderVote™ automated way of producing and distributing survey (e.g., skills testing, inventories, instruments, evaluation, new product focus groups, needs assessments, opinion surveys, voting) will eliminate at least \$30 per user per year in production, printing, distribution, compilation, and licensing of formal and ad hoc survey instruments. (replaced by LeaderVote™)

Directory Management Resources -- \$110 per year per user (industry number) in savings over current methods for entering, tracking, updating and deleting enterprise master records on each employee. (displaced by LeaderMyProfile™)

Wasted Time in Meetings – Used a high conservative number of 15 min. per user per week saved re. poor documentation, preparation, background and source material distribution, reviewing minutes, etc. (reduced by LeaderMeeting™ and LeaderPhone™)

MS Outlook Targeted Viruses – MS Outlook viruses are impotent in LeaderMail™ and therefore the enterprise can conservatively save \$20 per user per year in costs now incurred.

Non-proliferation of E-mail Attachments – Save 10MB per user per day at a cost savings of \$6.56 per GB in spinning disk storage.

Phone Conferencing – Conservatively assumed that only 10% of the user community would even use the LeaderPhone™ service and that they would make 4 calls per week at an average of 30 minutes per call with 7 people on the call at a savings over current costs of \$.25 per minute per leg.

Travel Time – Conservatively used 16 hours a year as the savings per user gained from use of LeaderPhone™ and LeaderMeeting™. We're using a \$40/hour time cost

Document Searching & Finding – Conservatively used 15 minutes per user per week as the amount of time saved not having to search for documents, files, faxes, voice mails, Emails. Etc. We're using a \$40/hour time cost

Scanning & Deleting Superfluous Email – Conservatively estimated that each user spends 0.43 hours per week scanning and deleting 50 superfluous messages a day. Then, we reduced that savings by 50%. We're using a \$40/hour time cost. (The number here is likely factors higher than we are using according to recent Gartner Group studies.) (reduced with LeaderMail™)

Superfluous Browsing – Conservatively used an estimate of 15 min. per week per user as the amount of time users currently waste in superfluous “research” because they don’t have better access to internal documents that answer those questions. According to many studies, this estimate is low.

Exchange Server Licensing Costs – Estimated these cost can be reduced by \$50 per seat as user migrate to LeaderMail™). Assumed a 20% migration per year starting in the second year with that migration going no higher than 80%.

MS Project Licensing Costs -- Estimated these cost can be reduced by \$50 per seat as user migrate to LeaderTask™). Assumed a 20% migration per year starting in the second year with that migration going no higher than 80%.

Organizational Restructuring -- Very conservatively estimated that each manager would save 4 hours per year in time now spent pondering over restructuring plans and how to implement those change technologically. This number is likely very low. We’re using a \$40/hour time cost.

Client-side Software – the Leader2Leader™™ simple browser client configuration saves a whole host of maintenance and support costs. These benefits for WPAFB cannot yet be determined.

Thin Client Configuration – Leader2Leader™™ implements all the benefits of a “thin client” or “network computer” architecture with all its associated benefits. These benefits for WPAFB cannot yet be determined.

Management Priorities & Initiatives -- Leader2Leader™™ keeps management priorities in front of all users at all times creating untold benefits relative to clear vision, goals, objectives and responsibilities. These benefits for WPAFB cannot yet be determined.

Enterprise, Directorate, Group and Individual Productivity Gains – Strategy industry studies point to dramatic gains that can occur when an enterprise is able to clearly focus on its goals and it infrastructure supports that focus. 15-50% jumps in productivity gains have been observed. These benefits for WPAFB cannot yet be determined

MS Office Suite & Application – The Leader2Leader™™ environment is platform vendor neutral. It will run on and support all of the major operating systems and office suite environments. This means an enterprise can drastically reduce its dependence on Microsoft products without losing functionality. These benefits for WPAFB cannot yet be determined

Availability of Ohio Support – Leader is headquartered in Columbus, Ohio with 5 high-level developers working in the Dayton area. This means Leader, along with the University of Dayton personnel involved with this project can give highly personalized

and responsive attention to this project. These benefits for WPAFB cannot yet be determined

available
Spending Decision Support – As this project proceeds along iterative design and decision pathways, WPAFB will have a highly-experience Think Tank of players ~~between~~ Leader and the University of Dayton ~~that will be available~~. These benefits for WPAFB cannot yet be determined



from both

Appendix B

Personnel Resumes

1 Michael T. McKibben, B.Sc.C.E.

Graduate of The Ohio State University in Civil Engineering (1973). Listed in the *Who's Who in Information Technology*. Prior to Founding LEADER TECHNOLOGIES, Mr. McKibben was Founder and CEO (1987) of Planning Works, Inc. (PWI), a software developer and manufacturer specializing in electronic messaging, user interfaces, network transport, electronic transactions, enhanced fax, forms, groupware, LAN/VAN/WAN/Internet networks and electronic data interchange (EDI).

Mr. McKibben is a highly experienced entrepreneur, regularly sought out for speaking engagements and newspaper articles on such subjects as financing, leadership development, start-up dynamics, alliance building, outsourcing, high technology business, international relations, business ethics and strategic planning. His legal and financial acumen includes experience with all phases of business development including corporate structures, securities law, related tax laws, securities and tax filing requirements, shareholder relations, shareholder meetings and reports, director and officer responsibilities and liabilities, maintenance of corporate records, executive and director compensation, intellectual property law, governance guidelines, and the business judgment rule.

Mr. McKibben has secured major development, co-branding and agency agreements with a number of AT&T divisions: AT&T EasyCommerce Services, AT&T (Bell) Laboratories, AT&T Easy World Wide Web Services, and AT&T WorldNet Services (1995). He and his company re-designed, developed and fully documented AT&T's new flagship electronic messaging and enhanced fax user interface, AT&T AccessPlus 3.0. The AT&T Mail network handles approximately \$600 million a year in messaging and electronic commerce revenues. Built for AT&T the communications industry's first ever Microsoft Windows NT 4.0-compatible enhanced fax driver, AT&T Fax Sender 3.02. Upgraded to 32-bit standards the Worker's Compensation EDI processing package for a major AT&T customer. Designed the user interface, functionality, packaging, documentation, funding, sales and marketing strategies for Planning Works' Global Business Suite™ for AT&T Networks, including a new generation of web-centric personal information manager called SmartFolders™. Designed the user interfaces, packaging, documentation, funding, sales and marketing strategies for Planning Works' Messaging Solutions Wizard™, an ActiveX-based software development and messaging forms-building toolkit for message enabling business software applications with little or no programming. He is thoroughly familiar with most state-of-the-art programming and messaging standards and platforms, including OLE 2.0, OLEA, COM, DCOM, ActiveX, Java, RTF, MIME, VIM, SMTP, AT&T, X-400, X-500, MAPI, POP3, IMAP4, DOS, Windows 3.1/3.11/95/NT, PenDOS, OS/2, PowerPC, Macintosh, UNIX, AIX, HTML, Dynamic HTML, HTTP, EDI, ANSI, C, C++, FORTRAN, BASIC, COBOL, PASCAL, ORACLE, and ASSEMBLER. He is thoroughly familiar with the programming compatibility and incompatibilities of the currently popular Office Suite products, including Microsoft Office 97, Lotus SmartSuite, and Corel PerfectOffice.

Designed (1993) and developed a Balanced Scorecard metrics tree prototyping tool and database named ScoreKeeper® which has recently been identified as a premier tool of its kind by KPMG Peat Marwick's Strategic Consulting Group. Implemented ScoreKeeper software and training for The Fisher School of Business at The Ohio State University in its MBA curriculum and for special Executive Management programs for industry, including IBM's Palasaides School of Management, The National Warehouse Distributors Association, The Automotive Warehouse Distributors Association, and Lennox Industries.

Designed (1994) and developed Ink-it!® for Lotus cc:Mail, an executive handwriting system for use with pen-based computers for IBM and The Gillette Company's executive management. Also produced Ink-it! for Novell WordPerfect in alliance with Communications Intelligence Corporation (CIC), a leader in handwriting recognition and pen-based forms utilities. Mr. McKibben is thoroughly versed in both the hardware and software issues of pen-based, mobile and wireless technology. Designed and developed the software version of The Executive ScanCard™ System, successfully advertised and sold in international airline magazines by The Executive Gallery. Designed and developed a DOS-based sales management database named Sales Manager™.

Prior to software development (1987), Mr. McKibben focused on making Planning Works a top-shelf professional services consulting firm specializing in process improvement, re-engineering, productivity and balanced scorecard methodologies. Clients included major banks, research institutions, universities, real estate agencies, government agencies, insurance underwriters, computer manufacturers, software developers, non-profits, warehousing and distribution companies, brokerage firms, church organizations, and military institutions. These firms included the National Aerospace Plane Project, Chemical Abstracts, PaineWebber, the Bank Administration Institute, NCR, The Fisher School of Business at The Ohio State University, Commercial Parts & Service, the Dayton Board of Realtors and the Council for Adult and Experiential Learning. Designed and manufactured the Personal Planning System™, a paper-based organizer/planner, and seminar program whose content centered around goal-setting, time management and personal productivity. Particularly expert in personal and work group productivity, Mr. McKibben has published a number of books and articles on subjects such as leadership, teamwork, creative thinking, strategic planning, goal setting, stress management, time management, and sales time and territory management.

2. Brad Whiteman

(614) 861-6566
bwhiteman@leader.com
921 Eastwind Dr Suite 118
Westerville, OH 43081

Brad Whiteman

Experience

Chief Technical Officer Leader Technologies

1999-2001 Leader Technologies Columbus, OH

- Manager for Application Development group.
- Develop and Implement Information Technology solutions for the company.
- Oversee all software design and development activities.
- Oversee all phases of technology research, development, deployment, customer service, and support.

Chief MOCAS Application Development Division

1997-1999 DSDC Columbus, OH

- Manager for Application Development group with more than 50 workers.
- Provide technical leadership for a complex multi-tiered computer system.
- Provide resource assignments and budget allocation for project managers.

Technical Lead Shared Data Warehouse

1995–1997 DSDC Columbus, OH

- Lead the design, development, and testing of a large Data Warehouse and query application.
- Successfully deployed and supported this system.
- Lead a development staff of more than 50 people.

Chief, MOCAS System Transition and Performance Branch

1993–1995 DSDC Columbus, OH

- Lead all migration efforts from a large legacy mainframe application to a client server environment.
- Worked directly with customers on development efforts.
- Supervised a staff of 10 leading all the migration efforts.

Application Developer

1987–1993 DSDC Columbus, OH

- Lead developer on multiple client /server applications. This includes gather customer specifications, creating programs, developed documentation, and coordinated testing and deployment.
- Provided technical support to the customers on these applications.

Education 1977–1981 University of Iowa, Iowa City, IA

- B.A., Liberal Arts.

Interests Coaching and playing soccer, reading, working with computers.

References Available on request.

3. Jeff Lamb

JEFF R. LAMB

EXPERIENCE

Applications Development

Design and development of applications using Java, JSP, EJB, XML, SQL, DHTML, HTML, Javascript, Visual Basic (VB), C++, Oracle, Active Server Pages, VBScript, and Access. This includes database design, OO design, applications development, implementation, and development of web-based and client side graphical user interfaces.

Other Responsibilities

Project management including solution identification, customer relations, scheduling, budgeting, specification, technology insertion and management of full-time, part-time and contract personnel.

Provide formal classroom and informal training including general object-oriented programming design and Java language specific details and implementation.

Accomplishments

- Led 12 member team in the development of web-based telephone conference calling and contact management application. Development including writing telephony scripts to program the phone-user experience, using XSL transforms to transform XML document descriptions of the interface into HTML targeted for the particular browser, Java business logic, Oracle data storage, and utilizing an object-relational mapping tool.
- Designed, developed, and built hardware and software based computer vision and response system. Development included designing hardware circuitry to store system state and interface with the host computer (serially and through the PC-AT keyboard interface), interfacing with a network video camera to collect the visual input for the system, and real-time software development to respond to the incoming visual stimulus.
- Led 4 member team in the development of Java to SQL mapping tool. Tool takes existing Java objects and automatically creates database tables to store those objects, Java objects to manage the creation and storage of these objects, and JSP files to manually edit, add, and remove objects from this database. Conservative estimates indicate that this tool cuts more than 40% of the historical coding time out of all projects that require database design, cuts the debugging time in half, and produces a more robust, flexible, and integrated solution than manual methods would have.
- Led 3 member team in development of premier web entertainment site. Work included database design, Java, JSP, EJB, and HTML.
- Developed suite of Java tools to load test existing web applications. Development including understanding of HTTP protocol, multi-thread programming, and distributed web communication.
- Developed web application to retrieve records from legacy SQL database (Oracle) serving as a helpdesk application and convert to web view. Records were converted to XML and then translated through a XSL sheet selected by the user to render a custom view of the data. Included XML, DTD, XSL, Java, and JSP.
- Led 3 member team in development of email client web application. Development included Java, JSP, HTML, database design, Java Mail API, and DHTML.
- Developed web-based document management system that receives incoming faxes, stores the documents, OCRs the documents, indexes the OCR results, and provide a search interface for the store of documents which can then be delivered in text or image formats. Development included Java, JSP, database design, and HTTP.
- Led 5 member team in development of on-line collaboration software to include chat, instant messaging, shared presentation of power-point and other files, shared meeting minutes, and shared

white-board. Development included Java, JSP, HTML, and advanced DHTML, and javascript. No client-side Java was employed in this project.

- Led 5 member team in development of complete subscription service e-commerce web application. Included database design, credit card transaction processing, Java, HTML, JSP, EJB, transaction processing, interface generation from database state, custom database caching to improve performance, and web-based database administration development.
- Developed Java servlet and application to dynamically generate stock chart images based on stock data. Application could serve gif or jpeg files directly back HTTP stream or write result out to a file to be served by the web server normally. Currently used to generate thousands of stocks each evening.
- Project manager for 5 member team that developed web application to manage multiple anonymous email accounts for users. Included hacking sendmail and pop software on Linux, Java, JSP, and database design.
- Wrote wireless palm application to interface phone conference application to any wireless palm device.
- Wrote Java application to do graphics animation on Palm Computers. Written to KVM specification. (One of first 20 people in the world to write a Java application for the Palm platform.)
- Developed incoming file converter to take any format file and as intelligently as possible create an index list of keywords within that file to be indexed by a search engine. Written in Java, designed to take any file without being designed to any particular file format; it has been tested with Word, Excel, Powerpoint, HTML, WordPerfect, various Star Office formats, and raw database dump files.
- Led 5 member team in development of web application to manage projects, including prioritization, automatic notification of project changes, time cards, schedules, time projections, task lists, instant and dynamic recalculation of deadlines based on current data. Effort included database design, Java, EJB, JSP, HTML.
- Developed application that tracks all aspects (including scheduling, tracking, and billing) for the maintenance, support, upgrading, cash delivery, location, owner, use, etc. for the majority of automatic teller machines in the world.
- Developed simple Java EJB component to secure collections of JSP pages. Allows programmer of JSP page to include a single line of code and have collective security of the entire project. Once the user logs into one page, their authentication token is maintained and they are given access to the entire collection of pages.
- Developed Java EJB component to provide navigation within multiple pages with any given JSP page for any given database query and maintain the user's state across navigation action.
- Led 3 member team in development of complete on-line grocery store solution. Effort included database design, JSP, HTML, Java, EJB, DHTML, and Javascript
- Project Manager for 3 member team that developed web-based medical dosage administration input, tracking and reporting system. Work included database design, JSP, HTML, Java, EJB and dynamic image generation.
- Member of 2 member team that developed ASP (Active Server Page) complete ecommerce solution. Effort included work with COM, Javascript, VBScript, SSL, Verisign, HTML, and web graphic design.
- Developed complete web based ecommerce application. Involved Visual Basic programming, database storage of metadata information, integration of previously developed C++ CGI fuzzy logic search program to provide client search on non-exact matching criteria with architectural plans database, Java image viewing program to provide zoom and scroll display of HPGL programs for web surfing clients, and Java animation program for marketing.
- Developed comprehensive workorder input, tracking, and report program. Written entirely in distributed client-side Java, and deployed to cross-platform environment. Included the development of own JDBC compliant flat-file based database in Java. Also involved custom version of Java's serialization interface and several Custom GUI components
- Member of 3 member team that developed pure Java helpdesk application. Includes JDBC access to Oracle, customized user input, data mining to find jobs to complete, finding similar completed jobs to offer insight into possible solutions, reporting features to help identify problem areas and automatic configurable email notification.

- Member of 2 member team that developed flexible pure Java Wizard creation framework. Presents programmer with simple set of tools to create any complexity branching decision tree, data collection, validation, and a summary of the data collected.
- Led 2 member team that developed program to automatically add borders and textual metadata to 80,000+ image database being published to the web. Program generates thumbnail image, complete HTML preview files, and links to images.
- Refined Java image display broker client. This client implements *Lockheed Martin Missiles and Space* API to talk to very large (multiple terabyte) imagery server. Displays only the needed pixels for the screen.
- Developed Java Web Spider Object. Encapsulates the functioning of a web spider and provides configuration to allow for standard spider functionality. Includes visited site memory, custom fuzzy logic algorithm to pick next site to visit, goal criteria, allowed depth, breadth, etc. Provides framework for data mining applications and mobile agent technology.
- Installed MS SQLServer, configured, created tables and accounts, and made Java JDBC-ODBC connection to database.
- Developed flexible and extensible Java Print API framework to provide programmer with encapsulated printing functionality within Java. Includes such components as Tables that automatically size themselves based on the data they contain, Pie charts that can be created with a single line of code, any image sized to fit the page, or constrained to a certain size, any gui component, and more.
- Developed Java program to parse complex line data files, like HPGL, removing unneeded lines, and straightening non-square lines. Optimization provided improved quality of architecture plans and faster download times for files published to the web.
- Developed C++ program to allow web design client to replace strings within HTML files for entire directory trees. (For example when a client phone number changed, the program would search through the entire website and replace the old phone number with the new)
- Member of 3 member team that developed distributed, multiple concurrent user Access database and VB interface to implement organization funding management and purchase tracking system.
- Developed distributed Visual Basic, Access, and Excel suite of programs to encompass entire business process. Overhauled existing manual process replacing with tailored integrated process. Included custom user interface design, data conversions, automatic data ingest, and several other advanced features of the Microsoft Visual Basic/Office/Access suite. Produced automatic reports in seconds that previously took nearly a man-year of work.
- Developed Visual Basic program to automate and simplify the generation of websites. Allows global changes to website parameters and the subsequent regeneration of entire website including frames, tables, images, and hyperlinks.
- Developed Visual Basic program to track home listings for realty company. Included development of database for data entry, storage, and retrieval to automate the process of updating web content.
- Developed Visual Basic program to parse proprietary third-party home listing files of widely varying and inconsistent format, turning them into clearly formatted and organized HTML files. Allows for quick and automatic extraction and webpage postings of home listing data.
- Led 2 member team in development of task management application. Written in pure Java talking to an Oracle database, the application tracks and predicts completion times of tasks, allowing managers to play complex what if games with their resources to meet deadlines of tasks with complex priorities.
- Developed and integrated Visual Basic and Java application to import entire directory tree structure, search for image files, build a database of image file information and display this information and the images. Application provides interface to select jpeg quality level, add text (any color, font, and size) to images, resize to any width and height, for any imported image. Provides complete image control for the webmaster.
- Developed Visual Basic program to parse phone log data, populate Access database and generate customizable summary reports and charts
- Developed Visual Basic and C++ website statistics package. Included parsing of various website access log files, automated analysis of data, chart generation, and a program for Win95 to execute a given program at a given time (cron tab for Win95). Allowed automated retrieval, report production, and publishing for any number of client websites. (Included integration of a third party statistics program)

- Member of 3 member team that migrated and integrated legacy databases from Oracle 3 on VAX, Stairs on an IBM mainframe and Oracle 7 into combined Oracle 7 database. Millions of rows, hundreds of columns and dozens of tables were migrated and/or combined through this effort.
- Developed complete database application to provide Java Applet interface and search capability to >1,000,000 row, >50 column, multiple table Oracle database. Development included Oracle SQLPlus and Java client interfaces.
- Developed Borne shell script and Oracle SQLLoader system to automatically filter and update personnel "locator" Oracle database.
- Led 3 member team in complete network integration project. Included the tight and seamless integration of X.25 leased line, existing IPX intranet, Novell server, NT server, Remote Access Server, Proxy Server and Exchange server to provide complete and secure corporate access to business-critical data
- Developed pure Java network group messaging service and API. Allowed pure Java clients to connect to a known server (IP address or name and port number only needed) and register to receive multicast traffic for a certain keyword group. Server can handle multiple groups. API provides Java events and Java String objects as traffic.
- Developed a version of TCP (ran on top of UDP) to deliver better overall quality of service, lower latency and more error correction than standard TCP over very noisy/poor connections. Included proprietary innovative progressive clock synchronization algorithm, proprietary NACK vs ACK protocol, and several other enhancements over standard TCP
- Led 4 member team in installation and configuration of Linux servers to act as Apache web server, email server, firewall, remote access server, proxy server and fault-tolerant file server.
- Member of 4 member team that installed OC-3 ATM network to approx 75 Sun Ultra workstations. Involved 4 Cisco ATM switches. Later improved to OC-12 between switches and Sun Enterprise 4000 and 10,000 servers.
- Member of 7 member system administration and customer support team for 200-node Solaris, NT and SGI network. Included work in ATM OC-3 and OC-12, FDDI, Solaris, NT, Ethernet, NIS, NFS, SunOS, sh shell-scripting, and Oracle DBA.
- Member of 4 member team that installed 10 node Novell network and server. Included installation of Shiva net modem devices to allow remote access to network.
- Member of 4 member team to install multiple node, 3 server Novell WAN across 5 buildings in three very different locations on Army base. Involved 3 Novell LAN and Novell server installations, 3 Wan connections and a dozen client installations.
- Member of network admin and support team for multi-platform (Windows, Mac, Next, and Unix) campus-wide network. C and Solaris sh shell scripting.
- Developed Pure Java fuzzy logic framework to provide easy-to-use API for developers to produce any fuzzy logic application within Java.
- Developed C++ and Solaris sh shell program to convert postscript files into HTML documents, included conversion of image data to gif thumbnails and jpeg full frame images. Image conversion used intelligent algorithm to capture all data without wasting space by expanding image to be too big. HTML generation included table of contents and linked pages.
- Developed multi-user Access database application. Project included database design and normalization (fifth normal form), interface design, reporting, filling external Excel forms, integrating with legacy systems, and intelligent importing of data.
- Developed C++ implementation of DES (data encryption standard) with simple command line driven interface.
- Developed C (some x86 assembly) program that sits between computer and LPT port to monitor printer usage and assign usage to departments within organization.
- Developed C++, C, assembly, and machine code program to automate the collection and calibration of noise monitors (large environmental microphones). Involved significant low-level programming of both the device and the program. Calibration algorithms blazed new territory in terms of doing an expert analysis on the monitor to determine if true failure (need to be repaired) or drift (can be adjusted for) was occurring.
- Developed Visual C++ program to intelligently manage conversions between Left to Right (i.e. English) and Right to Left (i.e. Arabic, Hebrew) languages in both fonts and language direction.

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- Provided key Y2K evaluation, test creation, testing, correction and certification of legacy database application.

EMPLOYMENT HISTORY

University of Illinois - 1992-1993

Novell, Windows, and Macintosh Network Administrator

US Army Corp of Engineers Research Lab - 1993-1996

C++ Programmer / Novell Administrator

US Air Force - 1996-2000

Java Programmer / Solaris Administrator

Computer Wizards Consulting - 1997 - present

Owner, President, CTO, Head Programmer

TECHNOLOGIES

Languages

Java, XML, XSL, Visual Basic, C/C++, Visual C++, SQL, HTML, Javascript, ASP

Databases and Tools

MySQL, Oracle 7, Oracle 8, Access, SQLServer, Apache, Samba, NIS

Platforms

Linux, MS Windows NT, Windows 95, Windows 98, UNIX, Sun Solaris (Motif, OpenWin, CDE), Redhat Linux (KDE, Gnome), Novell NetWare

EDUCATION & CERTIFICATION

University of Illinois: BS Computer Engineering

Microsoft Press: MCSE course - SQLServer Setup and Installation

MCSE course - SQLServer Administration

MCSE course - Networking Essentials

MCSE course - NT 4.0 Client

MCSE course - NT 4.0 Server

MCSE course - NT 4.0 Server in the Enterprise

MCSO course - Analyzing Requirements and Defining Solution

Architectures

Sun Microsystems: Advanced Solaris Administration

Java Platform Certification

PUBLICATIONS & AWARDS

- *Using Fuzzy Logic to Validate Monitor Blast Noise Data*
- United States Air Force Achievement Medal and Commendation Medal



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4. Professor James P. Chandler

Professor Chandler is a leading figure and scholar in intellectual property law and in the protection of United States national and economic security. He is the President of The National Intellectual Property Law Institute (www.nipli.org), Emeritus Professor of Law at the George Washington University, and Chairman of The Chandler Law Firm Chartered. Prof. Chandler has been an intellectual property scholar for more than 20 years and has delivered hundreds of speeches and papers on the topic. An example of Prof. Chandler's work can be read online at the [Minnesota Intellectual Property Review](#). The Science and Technology Section of the American Bar Association and the Computer Law Association of America owe their founding, in part, to Prof. Chandler. He authored The Economic Espionage Act of 1996 (EEA) and co-authored the Uniform Trade Secrets Act. He has been a chief intellectual property advisor to 225 jurisdictions internationally as well as numerous Fortune 500 companies. Prof. Chandler's Leader responsibilities focus on all issues surrounding intellectual property and related security matters.

5. Edward B. Detwiler

Edward B. Detwiler

5361 Park Lane Drive
Columbus, Ohio 43231-4075

(614) 895-0465 (Home) EBD@columbus.rr.com
(614) 890-1986 (Leader Office) edetwiler@leader.com

With over thirty-five years in the data processing industry I have acquired an extensive technical and business background with a wealth of practical experience in leading large-scale corporate data processing projects and organizations. I have a proven track record of defining, building, and managing complex technical operations and processes. I have demonstrated the ability to generate creative solutions, communicate effectively, manage sustained technical and organizational changes over a long period of time, and satisfy business objectives. I believe much of my success as a senior executive is derived from my experience acquired from the many different business and technical opportunities afforded me and especially the support of the individuals under my management. I am most proud of my achievements in the development of my direct reports and members of their organizations allowing them to meet or exceed their personal objectives while satisfying the overall organizational goals.

BACKGROUND

Leader Technologies LLC: (July 2000 - Present.) As a member of the Board of Directors I am responsible for providing strategic guidance on business and technical matters. I am a key participant in determining strategies for corporate growth and direction; corporate structure; financial strategies; marketing strategies, corporate alliances; product design, and product launch.

As a full-time independent contractor for Leader, my responsibilities include LeaderPhone™ product management, product implementation strategies, pricing, financial analysis, hosting strategies, capacity planning, 24 x 7 reliability, and most recently LeaderPhone™ sales management. I have been instrumental in company and product presentations for investors, venture capitalists, and large corporate and government entities.

Senior Vice President of Data Center and Network Operations at Bank One

Corporation: (September 1979 - January 2000) My career at Bank One spanned over twenty years continually growing in responsibility while the corporation doubled in size every two to three years. I started as an Applications Development Manager for retail products such as checking and savings systems and then moved into operational areas defining strategies and implementing production assurance systems, automated production scheduling, change/problem management systems, network management, security (both data and physical), disaster recovery, business resumption, and storage management. I was directly responsible for the conversion and consolidation of data centers from newly acquired banking organizations.

The direct result of the data center and network consolidation strategy was three large-scale corporate data centers (two in Columbus, Ohio and one in Phoenix, Arizona) approximating 3,500 mainframe MIPS (millions of instructions per second capacity) and over thirty terabytes of online data storage. All mainframe and network management systems used extensive state-of-the-art automation to increase efficiency, reduce human error, and reduce run rate expenses. These data centers also housed over two hundred discrete midrange and server systems supporting administrative, financial and marketing applications. The 1999 operating budget was ninety-two million dollars with a capital expenditure rate of forty-two million dollars. Production availability exceeded 99.99% while processing over two hundred million online transactions every twenty-four hours. A total staff of 260 supported the 24/7/365 data centers and network operations. These data centers and the network management center consistently placed in the top three to five percent of their peer group for efficiency as measured through independent evaluations performed by Real Decisions (Gartner Group), IBM, and Compass over a six year period.

Previous Experience: From 1968 to 1974, I worked for the State of Ohio Department of Administrative Services. I started as an applications programmer using COBOL, advanced to writing CICS infrastructure programs in Assembler Language, and then moved into IBM operating systems programming. I ultimately became the department manager for Technical Support. I managed the support for all major State of Ohio mainframe operating and infrastructure systems including the Ohio Highway Patrol LEADS (Law Enforcement Automated Data Systems) supporting all other law enforcement agencies throughout Ohio.

While attending graduate school full-time from 1974 to 1976, I was an applications programmer for Rockwell International Missile Systems Division specializing in financial and manufacturing applications.

In 1976, I worked for the Harris Corporation as a technical manager specializing in remote job processing utilizing various mainframe communication protocols. Along with two levels of management above me, I was recruited from Harris to Mohawk Data

Sciences in 1977 where I was ultimately promoted to one of four Regional Systems Manager positions (twenty-two people and seventeen states). I was responsible for systems software support of all company products implemented in the Midwest. A major function of my job was to personally provide technical marketing support for sales to our largest customers.

EDUCATION

Capital University, Graduate School of Administration; Columbus, Ohio (MBA) Master of Business Administration Graduated in January 1976. (3.85/4.0 Grade Point Average) Specialized course work in venture management and acquisitions and mergers.

Franklin University; Columbus, Ohio (BS) Bachelor of Science in Business Administration. Minor: Industrial Management. Graduated April 1973 Summa Cum Laude. (3.9/4.0 Grade Point Average). Specialized course work in marketing and finance.

INTERESTS/ACTIVITIES/AWARDS

Received the Principal Appointment to the United States Naval Academy in 1964. Awarded the Department of Defense Commendation Medal for meritorious service while serving in the United States Army - Vietnam (1966 signed by General William Westmoreland). Eagle Scout. Have traveled extensively throughout the United States, Canada, South America, Central America, Europe, and Southeast Asia.

Intellectual interests are psychology, sociology, and philosophy.

Instrument rated private pilot active for over twelve years. Held both an Instructor and Jumpmaster rating for skydiving - over two hundred miles of freefall. Hold a current Advanced Open Water Scuba Diving Certification (PADI) and am still an active diver.

PERSONAL

Height: 6'0"; Weight: 200; Age: 56; Health: Excellent; Marital: Married; Military: U.S. Army enlisted; 1964-1967; Rank - SP5; Honorable Discharge

6. Bud Budrejko

428 Ridge Dr.

Stanley J. Budrejko

Divide, CO 80814

(719)686-1991

bud@computerwizards.com

Objective

To use analytical and research skills, combined with relevant experience and insight to build, administer, and improve networked computer systems.

Summary

More than 6 years experience in networking and computer administration and development. Expertise in trouble-shooting difficult system problems and developing creative solutions. Excellent at developing new systems and seamlessly integrating new technologies into existing architectures.

Work Experience

a. United States Air Force, National Air Intelligence Agency, Wright-Patterson Air Force Base, OH

Imagery Exploitation Systems Engineer – October 1995 to May 2000

- Windows 95 Administrator and Visual Basic Coder for the Open Skies Media Processing Facility
 - Integrated a densitometer and computer and automated input of figures and graphing of resulting output
- Sole Solaris Unix System Administrator for a Top Secret network of 200 machines
 - Increased production by developing and coding an automated backup scheme from the ground up to decrease network traffic during the day. This also made the tracking of files for restoring purposes much easier.
 - Wrote automated scripts to accomplish many of the common tasks, allowing for easier transition to new administrators and permitting more time for system development.
 - Set up automated “build” of new Unix systems which is still being used by our newer administrators.
 - Set up system to allow automatic propagation of changes across the entire network by causing modifications at re-boot time
 - Developed a system which allowed common users to choose between 8-bit and 24-bit displays on their desktop in CDE without administrator intervention, a feature which Sun was unable to support.
- Lead Network System Administrator

- Dramatically increased production by reducing imagery processing time by up to 15 times through optimization of existing code, as well as adding the ability to do distributed and concurrent processing of multiple images.
- Heavy involvement with both Solaris and Windows NT systems as well as integration of the two operating systems.
- The “go-to guy”. Assist administrators and engineers with any difficult task or problem which they are unable to handle on their own.
- Lead Windows NT Administrator / Network Integration Engineer
 - Set up Unix LDAP server for 2000 workstation network to allow the Windows NT systems to seamlessly use the Unix SMTP server. This alleviated network traffic by allowing the NT systems to run mail clients natively instead of off a Unix server. Also allowed for continuity between all Operating Systems.
 - Discovered a security hole in Chameleon integration software and engineered a solution to both disable the flaw and allow for automated setup of all clients.
- Network System Administration/Engineering and Code Developers Technical Team Leader.

Stanley J. Budrejko

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Divide, CO 80814

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Computer Wizards Consulting, Inc., Westerville, OH – April 1999 to present

b. Linux System Developer and Lead Engineer

- Developed current line of Linux systems for sale and use by internal code developers.
 - Includes file servers, proxy servers, workstations, and virtual domain servers.
- Integrated these systems into existing Windows 2000/NT/95/98 / Macintosh networks.
- Remotely customized and administer Solaris servers.
- Developed Linux servers which allow redundancy with automatic fail-over.
 - Redundant services between servers include mail, http, ftp, samba, file-serving, etc.
 - Redundant hardware systems include hard-drives (h/w and s/w) and power-supplies.
- Built many security features into our Linux servers including encrypted hard-drive partitions.
 - Encrypted tunnels for many services on firewalls for use by all systems on LAN

- Customized firewalls allowing only essential traffic through from only specified sites
- Secure Virtual Private Networks between our proxy servers
- Inspected customer sites for security concerns including personnel, physical, network, etc.
 - Suggested and put into place many changes which helped make these sites more secure
- Customized sendmail setups for customers to include source code changes.
- Set up and supported CVS systems to allow coders to work on projects remotely.
- Customized bug reporting software to fix security concerns not addressed in original package.
- Set up samba services on Linux systems, allowing me to remotely administer NT domains.
- Was able to install working instances of Oracle on unsupported Linux distributions.

Education

c. Bachelor of Science in Computer Science, May 1995

d. United States Air Force Academy, Colorado Springs, CO

- Took enough additional Electrical Engineering courses to qualify as a computer engineer.

Skills

- Excellent at automating redundant, time-consuming tasks to save training and work time.
- Experienced at integrating new technologies (hardware and software) seamlessly into existing systems
- Skilled at upgrading systems with little to no negative impact upon users or production
- Expert at trouble-shooting and correcting difficult system problems
 - Ability to come up with very ingenious solutions when troubles warrant this
- Master at shell scripting
- Experienced at finding security holes and plugging them

Additional Information

- Very experienced with both Solaris Unix and various flavors of Linux
- Some experience administering IRIX
- Took all classes required for the Microsoft Certified System Engineering track
- Limited experience on Cisco routers and ATM switches

- Currently working on 2nd Semester of computer-based training for the Cisco Academy

7. Mark Astin

MARK C. ASTIN, MCSE, SCJP

EXPERIENCE

Applications Development

Twelve years of education and experience in design and development of applications using various technologies including Java, C, C++, Ada, HTML and XML. Including database design, applications development, implementation, and development of web-based and client side graphical user interfaces.

e. Networking

Nine years of network management and design experience, including design development, deployment, budgeting and migration of Network Operating Systems, management, procurement, troubleshooting, and customer integration.

Management

Ten years of extensive management experience and training. Including team and project management encompassing solution identification, customer relations, scheduling, budgeting, specification, technology insertion and management of full-time, part-time and contract personnel. Personnel management experience includes performance assessment, hiring, firing, task assignments, and technology advisor to senior leadership.

ACCOMPLISHMENTS

- Chief designer/developer for Signup, Login, Permission security and Group management features of the LeaderPhone(tm) product.
- Developed automated code review system to facilitate peer review of junior developer's code. Allowed for quicker reviews by senior developers and concentration on design rather than formatting.
- Converted website to Java Server Pages(JSP) technology, using a multi-tiered design to ensure new site ran with little overhead on scarce client resources and server-side resources were effectively utilized, while ensuring a clear break in display versus business logic facilitating future maintenance.
- Developed a website management system utilizing JSP technology, server side Java components and a backend database system. System provides user authentication and login, and complete management functionality of all web based content so the site may be managed from any Internet connected system.
- Developed extensive user instructions to set up Windows clients for connection to a TCP/IP network. Transformed instructions into HTML and posted for all client's use.
- Transformed intricate static HTML page into a dynamic page using Java Server Page technology. Resultant code utilizes three Java bean applications, 7 individual Java classes, three databases as well as an intricate HTML page using multiple forms and Javascript functions.
- Developed automated daily process to update company's source code documentation. Resulting in documentation always being current. Process utilized Borne Shell scripts, and Unix cron jobs.
- Developed Java indexing program to quickly index file contents for later retrieval by various applications. Wrote several versions of code to baseline and ensure the fastest possible indexing technology was used.
- Developed and tested procedures to install Apache Web Server, Java Development Kit, MySql Database Engine, and Java Database Connector. Refined instructions through series of installations.
- Built and installed RedHat Linux on several computer systems. Documented detailed steps to ensure future installations would be quicker and conform with company configuration policies.
- Filled in, on several occasions, for commander in charge of 200 person unit. Attended senior level meetings, responded to on-base and off-base senior level inquiries and direction, solved immediate problems whether that be personnel related, radio communications, long-haul communications or network outages.

- Commanded 62 military and civilian personnel providing base-wide network management and system administration including all aspects of information protection. Supported 5,200 users and 63 Windows NT servers in 60 buildings encompassing \$15 million in computer and networking equipment. Responsibilities included, annual budget planning and execution for over \$400,000 annually, as well as reviewing and approving new projects such as the base's new ATM upgrade. Provided technical guidance and direction to senior leaders.
- Communications liaison for base's Disaster Control Group responsible for emergency situations from Y2K outages, weather related events, sabotage, or terrorist attacks.
- Implemented 24 hour-a-day network monitoring and reaction procedures with zero manpower increase.
- Directed team to install base's first firewall--identified as smoothest installation AF-wide to date.
- Developed information attack recovery procedures, to ensure network survivability as well as response measures in case of attack to 63 Windows NT servers, and 5000 machines.
- Implemented base's first ever trouble tracking system to track over 1000 trouble calls a day across for a 5200 person base.
- Developed 60,000 line Visual C++ program to simulate and animate parallel computer operations. Program is completely extensible to any parallel computer. Thesis advisor suggested program might be worth selling and was far beyond what was expected for a Master's Degree candidate.
- Led nine civilian and contractor personnel to manage all aspects of system administration and customer support for 1200 users and \$12 million dollars in computer equipment including 1500 computer systems. Team managed installation, operation, and configuration of VMS, NT, UNIX(SunOS), and Netware servers
- Procured and implemented unit's first network management tool suite.
- Led team to develop and implement Network Operating System migration plan--migrated 13 Netware 3.11 servers to 5 Netware 4.1 servers.
- Designed and deployed several C++ software tools to deploy online mandatory surveys, ensure enforcement of unit's virus protection policy, and to collect computer system statistics without user interaction.
- Initiated intense on-the-job training programs for Help Desk personnel to ensure continued proficiency.
- System Administrator for a UNIX mini-computer, alternate administrator for Vax and Sun computers, provided front-line customer support for 1700 PC's and 2000 personnel across many disciplines.
- Procured, and installed hardware/software solution for a new combat Electronic Warfare (EW) simulator-- allowed EW engineers to simulate specific combat scenarios and devise plausible EW counter measures. A \$250,000 project.
- Developed a comprehensive inventory control system to manage a directorate's entire computer system assets.
- Performed software quality assurance and contract management and system administration of the only depot level C-130 tracking and scheduling system--enabled scheduling of modifications for the entire C-130 fleet 900 plus aircraft worldwide.

MARK C. ASTIN, MCSE

EMPLOYMENT HISTORY

TDC Incorporated - May 1989 - August 1989
Database Developer

US Air Force - Sept 1989-Sept 1999
Systems Analysis Officer
Chief, Customer Support and System Administration Branch
Flight Commander, Information Systems Flight

Computer Wizards Consulting - Aug 1999 - present
Application Developer

TECHNOLOGIES

Languages/Technologies

Java, C/C++, Visual C++, SQL, HTML, Lisp, Pascal, Ada, Javascript, JSP, XML, Swing

Databases and Tools

Apache Web Server, IIS, Sidewinder Firewall, MySQL, Dbase III, Dbase IV, Oracle

Platforms

MS Windows NT 4.0, MS Windows (all versions), UNIX, Linux, NetWare 3.11, 4.1,

EDUCATION & CERTIFICATION

North Carolina State University: BS Computer Science

Mercer University: MS Computer Information Systems

Sun Certified Java Programmer (version 2)

Microsoft Certified System Engineer for Windows NT 4.0

MCSE course - Networking Essentials

MCSE course - Windows NT 4.0 Technical Support

MCSE course - Windows NT 4.0 Network Administration

MCSE course - Supporting Windows NT 4.0 in the Enterprise

MCSE course - Networking with TCP/IP on Windows NT 4.0

MCSE course - Supporting Microsoft Exchange Server 5.5

Netware 4.1 System Administration

Basic Communications Officer Training

Squadron Officer School

AT&T 3B2 System Administration

PUBLICATIONS & AWARDS

- United States Air Force Meritorious Service Medal
- United States Air Force Commendation Medal (1 oak leaf cluster)

4277 Laura Marie Drive
Waynesville, OH 45088

Phone: 513-897-2343
Fax: 513-897-1137

8. Steve Hanna

Steven E. Hanna

SKILLS HIGHLIGHT

Management/Leadership Skills: -
Program and Project Planning, Project Management, Personnel
Supervision, Customer Relations, Customer Support, Presentation Skills

General System Level Skills:
Requirements Collection & Definition, System Analysis, System Architecture
Assessment, Systems Integration, Testing & Evaluation, System/User
Documentation, Product development through delivery & sell off experience.

EXPERIENCE

10/00 – Present Computer Wizards Consulting, LLC Dayton, OH

President

Provide business management for Computer Wizards Consulting, a wholly owned, independently operated LLC. Maintain business relationships with current and potential CWC customers; provide direct personnel supervision for all CWC employees; perform role of project manager for the Leader product development activity;

1/00 – 9/00 Oracle Corporation Dayton, OH

Managing Principal Consultant

Established a new, local consulting organization for the Oracle Advanced Programs Group in the Dayton, Ohio area. Established & built customer relationships with both U.S. Government organizations located at Wright Patterson AFB, as well as other U.S. Government contractors, currently operating in that market. Established business partnerships / teaming agreements with other contractors; developed and supported new business proposals; hired consultants to staff the new projects.

2/98 – 1/00 Lockheed Martin Corporation Dayton, OH

Operations Lead - Intelligent Library Systems Development Team

Responsible for all operational design issues as well as operational contract documentation for a commercial system. Created the Concept of Operations Document, supported development of the System Specification, defined the Program Maintenance Plan; created the system Maintenance and the Operations documentation.

Member of a small team that conceptualized and marketed the commercial implementation of a US Government system for international sales; supported architecture definition, general system specification and user concept of operation development. Responsibilities also included foreign travel and extensive international customer interface and presentations.

EXPERIENCE
(CONTINUED)

6/91 – 2/98 Lockheed Martin Corporation Dayton, OH

Site Manager – IDEX II Program (WPAFB)

Responsible for all facets of a small, remote organization supporting the Operations & Maintenance functions on the U.S. government IDEX II (Imagery Display & Exploitation) program. Responsibilities included oversight of the operation, maintenance and repair of approximately \$70 million of Hardware and Software, personnel supervision, and customer relationship management.

6/83 – 6/91 Lockheed Missiles & Space Washington D.C. Area

Supervisor:

Managed a small group of personnel responsible for the integration of new capabilities into an operational system. Performed long range planning activities; supported multi-organization planning & integration activities; orchestrated system wide functionality and regression testing; provided leadership support to operational crisis support teams.

Group Lead:

Performed trouble shooting and crisis support; mentored junior analysts.

Systems Analyst:

Provided daily system analysis of the operating performance of orbiting spacecraft assets. Responsibilities included generating weekly, monthly, and annual reports; regular status briefings to senior management.

Real -Time Analyst:

Provided liaison support between the operations team and the engineering support staff. Identified and documented operational work around procedures for use by the operations teams.

6/81 – 6/83 Lockheed Missiles & Space Sunnyvale, CA

Satellite Engineer (Onazuka, Air Force Station)

Provided real time support to U.S. Air Force Satellite programs; performed mission planning; performed satellite contacts; monitored the satellite down-link telemetry; identified problems in vehicle state of health and recommended corrective courses of action.

EDUCATION

Eastern Kentucky University

- Bachelor of Science – Industrial Technology 1981
- Associate of Science – Drafting & Design Technology 1979

Professional Courses

- Kepner-Tregoe: Project Management 1997
- LM – Supervisory Training & Employee Management 1994

9. Eric M. Rosenberg

Eric Rosenberg

2252 Ferndown Dr

Miamisburg, OH 45342
(937) 436-4684
eric@computerwizards.com

Experience:

1998 – Present Leader Technologies / Computer Wizards Consulting, Columbus, Ohio

Senior Software Engineer

Performed a variety of software design, development and project management tasks. Worked as one of the senior members of a team designing and implementing custom software for clients. Recent focus has been on the development of server side Java code in support of web based applications. Technologies used include Java, RMI, MySql, JavaMail, Oracle, Object Store and others as needed.

1997 – 2001 National Air Intelligence Center, Wright-Patterson Air Force Base, Ohio

Computer Systems Developmental Engineer

Developed customized applications for use by internal customers. Used a variety of technologies and skills to satisfy the unique requirements of supporting a 150+ member imagery-reconnaissance organization. Technologies used include Java, JFC, RMI, C/C++, Perl, Unix Shell, Oracle, Object Store, and others as needed.

1996 Hewlett-Packard Santa Rosa Systems Division, Santa Rosa, California

Intern

Member of the software development team working to create an automated testing device for RFICs. Key technologies used included Perl and CGI.

Education:

1996
Gainesville, FL

University of Florida,

Bachelor of Science Degree in Computer Engineering, December 1996

Graduated with High Honors

Certification:

2000 Sun Certified Java Developer

2000 Sun Certified Java Programmer

Security Clearance:

1997 – 2001 Top Secret – SCI

10. Steve Engle

Stephen D. Engle

PROFESSIONAL EXPERIENCE

Millennium Worldwide Consulting, Westerville, OH 1/99 to Present

f. Chief Operating Officer

- Founded and directed company to \$1.1M and maintained a profitability of \$350K in its first year.
- Maintained over \$1M in revenue within its second year during the economic and industry slow-down.
- Assisted with the successful negotiation and placement of a corporate merger between Millennium and Leader Technologies.
- Define and develop corporate policy, procedures, and organizational structure, as well as its long and short-term strategic plans outlining its business goals.
- Assisted in the placement of over eighty (80) IT and Telecommunications professionals at client sites within two years in business.
- Led the successful negotiation of client contracts with Qwest, UUNET, Sterling Commerce, Toyota, Dell, ARC, Checkfree Corporation, Ashland Chemical, and Arthur Anderson
- Direct and coordinate the administration of annual budgets, capital items, financial reviews, legal reviews, hardware and software training, incentives, sales initiatives, networking, and headcount for the business.
- Manage strategic accounts and outside alliances and partnerships, as well as Millennium's outside consultants in order to develop business leads and close sales.
- Develop marketing plans, business analysis, business requirements, system specifications, financial forecasts, pricing models, and web-site content for the LeaderPhone product/service offering.
- Assisted in the development of the LeaderPhone sales and affiliate channel programs.
- Develop, target, and drive business development initiatives to grow the telecom services business for the LeaderPhone and Qwest distribution channels of Millennium.

Qwest Communications/LCI International, Dublin, OH 2/93 to 12/98

g. Regional Manager, Network Provisioning – 12/97 to 12/98

- Recruited, hired, supervised, and managed the Pacific Region Engineering team of thirteen engineers responsible for revenue turn-up via customer network installations for voice and data services.
- Managed communications and relationships with several outside RBOCs, CLECs, and IXC's.
- Managed the process re-design for Order Management that included system automation and process improvements resulting in incremental revenue via life cycle improvements.

- Improved throughput performance and exceeded standards for the department regarding compliance to key performance indicators.
 - Improved regional installation intervals from 101 days to 35 days.
- h. Manager, Strategic Application Implementation – 4/97 to 12/97**
- Hired a staff of six Project Managers responsible for complex, custom development and deployment of voice and data applications involving significant back-office and network infrastructure development for large customers.
 - Spear-headed development of the implementation process for SAI that included the creation of an online Project Management system via the corporate intranet.
 - Developed business cases to justify development costs in accordance with the proposed revenue opportunities on a per customer basis for the company. Acquired and managed capital needs for all departmental projects.
- i. Manager, Infrastructure Program Management – 3/96 to 4/97**
- Hired a staff of seven Project Managers responsible for large capital, infrastructure projects.
 - Project managed \$1 Million to \$20 Million internal network projects. Projects included new Switch installs, transport facility installs, and advanced intelligent platform enhancements for new product development initiatives.
 - Developed business cases to justify development costs in accordance with targeted IRR on a per project basis for the company. Acquired and managed capital needs for all departmental projects.
- j. Manager, Product Development – 10/94 to 3/96**
- Hired a staff of six Project Managers responsible for large product development projects.
 - Based on marketing requirements, created business cases and financial plans, and project managed process through implementation for large-scale new product roll-outs.
 - Developed business cases to justify development costs in accordance with targeted IRR on a per project basis for the company. Acquired and managed capital needs for all departmental projects.
- k. Senior Product Development Specialist/Product Development Specialist/Responsible Organization Specialist/Customer Service Representative – 2/93 to 10/94**

EDUCATION

Ohio University
Athens, OH

- Bachelor of Science in Communication.
- Major in Communication Systems Management.

11. David Eaton

TECHNICAL RESUME OF DAVID M. EATON

EDUCATION

Ohio University in Athens, OH
Bachelor of Science Degree, Economics, Summa Cum Laude
Internship with the Joint Economic Committee of the U.S.
Congress
Extensive vendor-provided technical training in all aspects
of Database Administration.
Council Member, Ohio University Arts and Sciences Dean's
Advisory Council

TECHNICAL EXPERIENCE

Hardware: HP9000 Midrange Server, Sun Sparc
Server,
NCR 3445 and 3450 Work Group Servers,
RS/6000 Midrange Server, DEC VAX, IBM
Compatible PC, Compaq Proliant 3000,
DecAlpha
1200 and 4100.

Oper. Systems: HP-UX 8.x, 9.x and 10.x UNIX, SunOS 5.4
UNIX,
NCR SVR4 UNIX, NCR SVR4 MP-RAS UNIX,
AIX 4.2 UNIX, Digital UNIX 4.0x, NT
4.0, DOS,
OS/VM, Sun Solaris 4.x, Windows

Databases: Oracle 6.x, 7.x, 8.x, Informix SE 4.0,
dBase, FoxBase

Software: SQL*Plus, SQL*DBA, SVRMGR, SQL*Loader,
Oracle Import/Export, PL/SQL, Informix
Wingz,
UNIX Shell Programming, dBase, Foxbase,
Designer/2000, PeopleTools, SQR
limited)

PROFESSIONAL CERTIFICATIONS

Informix Standard Engine Certified Developer
Oracle Master Certification - Application Analyst

Oracle Master Certification - Database Administration
Oracle Master Certification - Designer/2000 Systems
Analyst
Oracle Master Certification - Technical Support

PREVIOUS ENGAGEMENTS

INTERNET SOFTWARE DEVELOPMENT COMPANY BASED IN COLUMBUS, OH

Work efforts included:
Logical and physical database design review.
Mentoring of internal staff on technical aspects of Oracle database administration.
Provided various custom developed database monitoring tools and utilities.

U.S. DEPARTMENT OF STATE, WASHINGTON, D.C.

Work efforts included:
Technical evaluation of client's PeopleSoft HR deployment on Oracle/NT.
Consultative assistance in identifying appropriate security and administrative policies and procedures.

CHEMICAL PRODUCTS MANUFACTURER BASED IN PARSIPPANY, NJ

Work efforts included:
Provided technical training to the organization's Oracle Database Administrator.
Emergency support / problem resolution.
Established process steps required to upgrade databases from Oracle 7.3.4 to Oracle 8.0.5.1.0.
Established process steps required to rename databases and relocate datafiles.
Provided database assistance in support of the organization's PeopleSoft HRMS and PeopleSoft Financials/Distribution/Manufacturing application upgrades from release 7.0x to 7.53.

METAL BUILDINGS MANUFACTURER BASED IN MEMPHIS, TN

Work efforts included:
Emergency database tuning and application tuning.
Rapid analysis and execution of required emergency database maintenance required to allow month end Financial System processing.

Development of a strategy required to rehost the database, PeopleSoft Process Scheduler, and Application Manager on a new production server.

INTERNATIONAL RETAIL FOOD DISTRIBUTOR BASED IN COLUMBUS, OH

Work efforts included:

Full Oracle8 Database Administration services in support of PeopleSoft Financials, Supply Chain, and Distribution applications.

Upgraded the organization's Asset Management module from application release 7.50 to 7.52.

Performed PeopleSoft PeopleTools, Applications, and SQR upgrades.

Responsible for all aspects of PeopleSoft security administration.

Responsible for all aspects of project migration and patch application.

Implemented and administered multiple application servers, with round-robin connectivity, in a three-tier physical architecture.

Developed and administered multiple PeopleSoft Process Schedulers.

Participated in the full life cycle deployment of the PeopleSoft implementation, then provided both on-site and remote support services.

MEDIA INDUSTRY LEADER BASED IN RICHMOND, VA

Work efforts included:

Optimized PeopleSoft-generated alter scripts to minimize execution duration associated with a PeopleSoft HRMS upgrade from Version 5.1 to 7.0., while concurrently minimizing the risk of upgrade execution failure due to object sizing, temp space, or rollback segment failures. Assisted the organization's Database Administrators in completing an Oracle upgrade to Release 7.3.4 from Release 7.3.2.3.

REGIONAL FINANCIAL SERVICES LEADER BASED IN NASHVILLE, TN

Work efforts included:

Conducted an audit of the organization's immediate pre-production deployment of PeopleSoft Financial Application in an Oracle7 environment.

Provided technical training to the organization's Oracle Database Administrator.

Provided managerial and technical recommendations required to address a doubling of database contents resulting pending merger activity.

Performed a tuning analysis of the SQL associated with a key, long running PeopleSoft COBOL process.
Participated in the organization's PeopleSoft application upgrade from release 6.11 to release 7.52.

INTERNATIONAL EDUCATION SYSTEMS DEVELOPER BASED IN BALTIMORE, MD

Work efforts included:

Application patch application and troubleshooting for the organization's PeopleSoft 7.52 and 8.1x environments on Oracle 8.1.6.x platforms.

Technical analysis of the organization's proposed data replication mechanisms between distributed Oracle-based datastores.

Database sizing and design analysis for a full PeopleSoft Financials application environment.

Logical and physical cleanup of the production Oracle7 database environment in preparation for production deployment.

Provided technical training to the organization's Oracle Database Administrator.

Performed a tuning analysis of the SQL associated with a key, long running PeopleSoft SQL process.

Participated, as Project Manager, in the organization's PeopleSoft application upgrade from release 6.11 to release 7.52.

MULTI-STATE ELECTRIC SERVICE PROVIDER BASED IN COLUMBUS, OH

Work efforts included:

Project Technical Lead for the Leased Asset Management System (LEA) upgrade from PeopleSoft Version 5.1 to Version 7.0. This LEA system had been created through extensive customization of PeopleSoft Asset Management module.

Project Technical Lead for work efforts associated with integration of the Leased Asset Management System with the organization's other PeopleSoft Financial System modules.

Full Oracle 7.x Database Administration services in support of PeopleSoft Financials applications.

Team Leader on Data Conversion project efforts for the Leased Asset Management System.

Development of utilities to facilitate PeopleSoft version upgrade efforts.

Systems Architect responsibilities on integrated infrastructure design.

TELEPHONE COMMUNICATIONS SERVICES PROVIDER BASED IN COLUMBUS, OH

Work efforts included:
Installation support for the Oracle RDBMS 7.3 and SQL*Net products.
Logical and physical database design responsibilities.

NATIONAL LAWN CARE INDUSTRY LEADER BASED IN MARYSVILLE, OH

Work efforts included:
Full Oracle 7.x Database Administration support services in support of PeopleSoft HRMS applications.
Consultative assistance on heterogeneous database bridging alternatives.
Application / database support for installed inventory tracking system.

INTERNATIONAL INSURANCE INDUSTRY LEADER BASED IN COLUMBUS, OH

Work efforts included:
Full Oracle 7.x database design and implementation.
Consultative assistance in mass data load efforts.

DEPARTMENT OF DEFENSE CONTRACTOR BASED IN COLUMBUS, OH

Work efforts included:
Logical and physical design of VLDB Oracle 7.x database environments.
Hardware and operating system software evaluations.
Evaluation of CASE and other development tools required to facilitate platform migration/reengineering.
Analysis of technical alternatives associated with heterogeneous database bridges.
Data Warehouse database design and development.

INTERNATIONAL TELECOMMUNICATION INDUSTRY LEADER BASED IN COLUMBUS, OH

Work efforts included:
Full Oracle 7.0 Database Administration responsibilities.
Development of a database backup facility to allow backup of open databases operating in Archive Log mode.
Design, tuning, and configuration of large databases.
Development of numerous utilities to facilitate database migration between midrange computing platforms.
Construction of an OLAP data repository for Executive Information System (EIS) use.

NATIONAL MACHINE TOOLS MANUFACTURER BASED IN CINCINNATI, OH

Work efforts included:

Conducted an audit of the organization's deployed Oracle 7.x-based PeopleSoft Human Resources application environment.

INTERNATIONAL CONSUMER GOODS INDUSTRY LEADER BASED IN CINCINNATI, OH

Work efforts included:

Full Oracle 6.x Database Administration and Systems Administration for an HP9000 HP-UX UNIX environment. New development and support of existing mainframe, midrange, and PC based applications.

ELECTRONICS INDUSTRY MANUFACTURER BASED IN COLUMBUS, OH

Work efforts included:

Full Oracle 6.x Database Administration responsibilities. Full Systems Administration responsibilities for an HP9000 HP-UX UNIX environment. Support for the firm's use of Oracle Financials applications. Development of an integrated payroll / cost accounting tracking system.

INTERNATIONAL TELECOMMUNICATIONS INDUSTRY LEADER BASED IN CHICAGO, IL

Work efforts included:

Full Informix SE 4.0 and Oracle 6.0 Database Administration responsibilities. Full Systems Administration responsibilities for NCR 3445 and NCR 3450 UNIX environments. Design, project management, development, and implementation responsibilities for a large-scale Decision Support platform. Hardware and software evaluation/selection.

ENTERTAINMENT INDUSTRY PROVIDER BASED IN CHICAGO, IL

Work efforts included:

Hardware and software evaluation/selection. Configuration and installation of the firm's personal computers and peripherals in a small network environment. Hardware and software trouble shooting.

NATIONAL OFFICE PRODUCTS INDUSTRY LEADER BASED IN CHICAGO, IL

Work efforts included:

Management consulting to branch personnel at the organization's geographically dispersed locations.

Development of regional purchasing and warehousing strategies for the various branch locations.
Evaluation of potential purchasing and inventory management software tools and applications.
Subject matter expert on the organization's primary forecasting and replenishment application tool.

PROFESSIONAL DEVELOPMENT COURSES

Fundamentals of the UNIX Operating System (AT&T)
HP-UX System Administration for the HP9000 Series 800 (HP)
Introduction to the C Programming Language (HP)
UNIX System V Release 4 Systems Administration (AT&T)
UNIX System V Release 4 MP-RAS Systems Administration (NCR)
Local Area Networks (Data-Tech Institute)
Troubleshooting a Local Area Network (Data-Tech Institute)
Advanced Oracle for Developers (Oracle)
Designer/2000: System Modeling and Tools (Oracle)
Designer/2000: Design and Build Database Objects (Oracle)
Developing Applications using Informix-4GL (Informix)
Developing Applications using Informix-SQL (Informix)
Developing Applications using Wingz-Datalink (Informix)
Informix-SQL Fundamentals (Informix)
Informix Standard Engine (Informix)
Introduction to Informix-Net (Informix)
Introduction to Oracle for Developers (Oracle)
Introduction to PL/SQL (Oracle)
Introduction to the Oracle Financials Concurrent Manager (Oracle)
Optimizing Informix Application (Oracle)
Oracle Version 6 Architecture and Administration (Oracle)
Relational Database Design (Informix)
Tuning Oracle Version 6 Applications (Oracle)
Fourth Shift Systems Administration (Forth Shift)
Inventory Forecasting and Replenishment Modules (IBM)
Mastering FoxPro 2.0 (Adam Green Seminars)
PeopleTools I (PeopleSoft)
Project Management (Kepner Tregoe)
Uniface Application Development (Uniface)
Windows 3.0 (Data-Tech Institute)
Wingz Commander (Informix)
Wingz Navigator (Informix)

12. Michael J. Greulich

INDIVIDUAL'S NAME: MICHAEL J. GREULICH

ADDRESS PO BOX 13272
COLUMBUS, OH 43213
614-864-4575
614-864-3395 (FAX)

JOB CATEGORY: SUBJECT MATTER EXPERT (ADP)

SECURITY CLEARANCE: TBD

EDUCATION: Academic:
BS, Business Administration
Gannon University, 1966
Erie, Pennsylvania

Professional:
Personnel Management for Executives
Ft. Ben Harrison, 1969
Indianapolis, IN
ADP Internship
Army Management Engineering
Training Agency, 1966
All DLA/DCSC/DSAC required
management training.
Various:
CINCOM Database Training
IBM Technology Seminars
IBM COBOL Seminars
DLA/DSAC Management Seminars

HARDWARE EXPERIENCE:

Mainframe experience includes IBM 360/65, 360/40, AMDAHL 470, 570, 580 RCA 3301, 301, 501, Univac 1005, CDC 915 OCR, Stromberg Carlson SD-4360, Honeywell 6000, Burroughs B3500, B6700
Micro/Mini experience to include Zenith 148 and 248, Gould, AT&T 3B2, Apple Powerbook, IBM PC

SOFTWARE EXPERIENCE:

OS experience to include MS DOS, MFT II, MVT, MVS, MS Windows, OS/2, UNIX.
Languages/Tools experience to include Ansi COBOL, ADW CASE tools. DBMS experience to include dBase IV.

EXPERIENCE SUMMARY:

Mr. Greulich has over thirty years of professional experience in Automated Data Processing. He has more than 30 years of experience as an automated information systems architect implementing the Life Cycle Management of systems development, design, and integration including employment of system Reengineering and Rapid Application Development (RAD) technologies; Command and Control system design; personnel, finance, and accounting system development. Throughout Mr. Greulich's extensive career, he has provided significant detailed technical experiences in the areas of system architecture, hardware/software evaluation and acquisition, printing, telecommunications and configuration management. Mr. Greulich's twenty plus years of leading major DLA/DSAC information systems organizations includes managing a directorate of over 50 civilian and contractor programming, systems management and administrative personnel.

EXPERIENCE DETAILS:

LEADER/EnSURE, Inc/Plain Enterprise Diversified Services

October 1994 to Present:

Mr. Greulich is currently Vice President, Chief Operations Officer for LEADER TECHNOLOGIES LLC of Columbus, OH, Columbus, OH, Account Manager for EnSURE, Inc. of Columbia, MD and owner of Plain Enterprise Diversified Services. He is responsible for providing his Customers with leadership, strategic planning, and technical support in the areas of system architecture, hardware/software evaluation and acquisition, printing, telecommunications and configuration management. His extensive background in information systems and government finance processes and procedures has contributed greatly to his success on numerous taskings in the government finance and logistics arena.

Defense Logistics Agency

December 1982 to September 1994:

Mr. Greulich served as Chief of the Systems Management Division, within the Directorate of Contract Administration Services of DLA Systems Automation Center. His Duties have included acting as DSAC Command Project Manager for major development efforts within the Mechanization of Contract Administration Systems (MOCAS). During this period Mr. Greulich supervised up to fifty system analysts/programmers (GS-07 - GM-14), functional analysts, technicians, administrative staff, and managed the coordination between Government Contractors/DLA HQs/DSAC on DLA/DSAC Command Projects, in addition to his normal System Management Division supervisor/technical responsibilities.

While fulfilling the above responsibilities, Mr. Greulich demonstrated the ability to disseminate technical expertise into an understandable, detailed project plan, and facilitate enthusiastic responses from members of his project teams by demonstrating abilities to turnaround a would-be impossible project into a viable executable process. Such success has triggered his being petitioned by HQ/DLA to participate in numerous initiatives exceeding the scope of DSAC. These initiatives demonstrated his abilities to define systems architecture, hardware/software acquisition, printing, telecommunications, configuration management, budget formulation, training, security required to protect against misuse, and dual connectivity. All of these technical and administrative functions were successfully performed in a DLA/DSAC matrix environment.

As Chief of the DSAC-A Technical Division, Mr. Greulich was possessed ADP-3 technical knowledge, and successfully disseminated this knowledge throughout his employees and the DSAC-A AIS staff, other managers, HQs, and government contractors. He evaluated the applicability of any new technology to the ADP and non-ADP community, and the functional end user on all new/revised technology.

As Technical Division Chief, Mr. Greulich had the ultimate responsibility to ensure the planning, development, coordination, reporting, and execution of all DSAC-A production releases for DSAC-A to the PLFAs meet all DLA/DSAC standards, directives, procedures, and fulfill all technical and end user requirements of every release.

As the System Management Division Chief, Mr. Greulich made the division the DSAC Information Resource Management (IRM) Division. HQ/DLA, DSAC Command, DSAC Directorates, PLFAs, and ADP/Functional personnel relied upon his leadership for direction on policies, directives, and procedures of various system aspects in relation to the technical support of the DSAC/DSAC-A automated systems.

As the DSAC-A System Manager Division Chief, Mr. Greulich successfully managed a variety of personnel. He was responsible for leading database and system oriented personnel, documentation clerks, trainees, computer specialists, and analyst personnel.

Mr. Greulich served as Project Manager of a major DLA/DSAC Command Initiative of moving the ADP Processing Functions of the DCMDS, DCMRS, TMOCS Centers into a centralized site, Defense Finance Center and Information Processing Center-Columbus (IPCC). He successfully functions between organizational boundaries, developed masterful logistical implementation networks, administrated and coordinated technical projects, utilized matrix management between HQs, PLFAs, DSAC management, contracting officials, and worked with technicians in developing the technical process to execute the “Command Project” of relocating the DCASR databases to DFC/IPCC. This project was critical to the modernization and simplification of the DLA Financial Operations ensuring better service, greater management flexibility, and reduction of operating costs of DLA and future appropriations required by Congress.

Mr. Greulich also functioned as DSAC Project Manager for the development of the Defense Contract Management Command Center (DCMC), a major DoD/DLA/DSAC

Command Initiative. To accomplish this assignment, he developed the transitional strategy for the technical platform and the PLFA databases allowing the DCMC to assume Command Control of technical as well as functional requirements that would create the final DCMC IRM environment required by DoD/DLA.

Mr. Greulich functioned as Technical Advisor, Project Manager, and DSAC-A System Manager of the Technology Division on the DLA/DSAC/DSAC-A (MOCAS) conversion from Honeywell to IBM. He devised the conversion methods for the conversion of HW 9-track to IBM EBCDIC, various utilities required for program conversion, HW JCL to IBM, wrote the requirements for use of DSAC-SLAP, and many more technical requirements for the final conversion of HW to IBM. He then took the team on the road to the DCASRs for training and implementation in the actual DCASR Environment. This project's success laid the groundwork for the next major DLA/DSAC initiative for the DCASRs, improved service to the DLA/DSAC Customer.

Mr. Greulich served as Technical Advisor and Project Manager on the conversion of the old database to the new IBM compatible database. He developed the technical system for file conversion, reconciliation, conversion reports, and all other technical and logistical requirements to convert from MOCAS Phase-I to MOCAS Phase-II. He devised the Otis Training Package and selected the Training Team which became one of the key factors in the DCASRs ability to implement. MOCAS is the only system in DLA that went from one hardware platform to another and at the same time implement to a new redesign, changing both the functional and technical environment. Five small DCASRs were converted in one year, and the four large DCASRs in six months. Mr. Greulich became one the principle architects that allowed for converting MOCAS from one technical system to another, while assuring minimum impact on the functional environment. This conversion laid the groundwork for the present IPCC relocations.

Defense Logistics Agency

September 1973 to November 1982:

During this period, Mr. Greulich functioned in the ADS Standards and Training Division of the Technical (Software) Directorate. Specific duties included: (1) Analysis, design, and development of software to support system/program development; (2) Development of software support of standards enforcement and management information; (3) Perform research and evaluation of software techniques for improving productivity.

He was a key technical person in the development of the Source Librarian and Preprocessor (SLAP) for DSAC. This system supports program development on IBM equipment and includes a source library system, a COBOL preprocessor and post processor, a management reporting capability, a transparent hierarchical means of program storage with automatic retrieval capability, and other facilities designed to aid programmers in their job performance.

Much of Mr. Greulich's time was expended by interfacing with application programmers and analysts in the development and maintenance of UADPS systems, in particular,

expeditious resolutions of Hotlines form the PLFAs. He was a major contributor in the analysis of several systems, such as, the Standard Augmented Mass Telecommunications Access Method (SAMTAM), and the DSAO Microfiche System.

Mr. Greulich also functioned as a Lead Computer Specialist in the Program Language Development Support Branch of the Technology (Software) Division. Major duties included; (1) Design and development of software systems to: (a) Enhance analyst and programmer efficiency; (b) Support and enforce standard programming techniques; (c) Provide management information capability; (2) Design, develop, and operate the DLA Data Element Standardization System; (3) Research and evaluate improved software techniques; (4) Serve as representative technical expert on matters concerning assigned areas of responsibility.

US Army Ammunition Procurement and Supply Agency
August 1966 to August 1973:

During this time, Mr. Greulich accomplished research and acceptance testing of vendor packages. He generated and maintained operating systems, and developed and implemented software to meet the unique needs of the agency, including executive and I/O control access methods for DASD and telecommunication capability. Mr. Greulich served as liaison between functional elements and analyst/programmer elements, and eventually became the Division Chief supervising 10 Computer Specialists.

Awards and Recognitions:

Mr. Greulich was nominated as one of the ten outstanding DLA employees of the year (April 1988 - March 1989) for his leadership on the DFC/IPCC DLA/DSAC initiative.

Mr. Greulich received a “Certificate of Appreciation” from the DLA Finance Center.

Mr. Greulich was honored by the Government Computer News (GCN) at a luncheon in Washington, D.C. for promoting “Information Technology in DLA”. This luncheon honored eight DLA IRM personnel who have made major contributions to improve DLA capabilities to support its customers.

Mr. Greulich received a DLA-Z Special Act/Service Group Award as Project Manager of the Phase-II implementation at four large DCASRs.

Mr. Greulich was nominated for the eleventh annual Federal Employee of the Year Award (Managerial Supervisory Award) for 1988 for his accomplishments in support of the DLA Mission as a manager of Automated Data Processing Technology and for his effort in behalf of “Major DLA Initiatives”.

13. Major General James E. Freeze, US Army (ret.)

Major General Freeze was formerly head of the US Army Security Agency and Deputy Directory of the National Security Agency. His speciality is cryptography. He recently conducted a full security audit for the Department of Energy. Major General Freeze currently serves on the Governing Board of Pinkerton Government Services.

14. William DeGenaro

Bill DeGenaro is President of DeGenaro & Associates, a business intelligence services firm. He was the Director of Business Research & Analysis for 3M Company. He also served 3M Company as Director of Innovation Resources and Strategic Planning Director. He served the White House as Director of Strategic Countermeasures Planning under Presidents Reagan and Bush. Mr. DeGenaro is the co-founder and principle of The Centre for Operational Business Intelligence and he is a Fellow and Director of the Society of Competitive Intelligence. He holds a management degree from the University of Illinois and advanced degrees from Harvard University, Columbia University, the Joint Military Intelligence College, and the University of Minnesota.

I worked on the CRP system from May 1997 to July 1998. The CRP system is a mission critical gateway for preparing voice usage records for the billing system. Performed numerous maintenance projects and system enhancements in C, C++ and Korn shell. Other major accomplishments include:

- Lead Oracle upgrade project. Researched issues and directed effort to upgrade application from Oracle 7.1.6 to Oracle 7.3.4. The effort was successful, and a subsequent upgrade to Oracle 8.0.5 was completed with minimal effort.
- Ported legacy subsystem. Ported last remaining VMS subsystem to HP-UX. Required co-ordination with several other systems.
- Conceived of, designed and implemented data viewer. Designed and implemented a data viewer for users. Reduced developer workload and increased user satisfaction.
- Lead hardware upgrade project. Co-ordinated migration of system to new hardware.

July 1995 – May 1997

Software Engineer
CompuServe, Columbus – OH

Project: Rapid Refund – VMS, C, and DCL
Updated and maintained tax-return formatting application for 1995-

16. Clancy W. Cross

CLARENCE W. CROSS JR.

Associate Research Systems Analyst

Education:

B.S. degree, Data Processing University of Dayton, 1980

Interests:

Electronic publishing, internet applications, WorldWide Web, environmental software, expert systems, fatigue analysis modeling, user-friendly interfaces to complex applications, databases, database management systems, teleconferencing systems, pollution prevention, green manufacturing, and environmental remediation, teaching and public speaking, writing user's manuals, and developing training courses.

Experience:

Since joining the Research Institute in 1981, Mr. Cross has participated in a wide variety of projects including the development of a state-of-the-art teleconferencing system, environmental database and expert system software packages for personal computers, a major crack growth analysis software system, office information systems, and electronic publishing on the WorldWide Web. He specializes in user-friendly interfaces to complex applications.

Mr. Cross is currently the head of the UDRI Web Development Center and the UDRI webmaster. He is responsible for acquiring sponsored research and development contracts in the area of information technology, especially those that use Internet technology, and managing a staff to perform the work. In his capacity as webmaster he promotes the use of the WorldWide Web at UDRI, leads a team to develop a UDRI policy for Web development and usage, reviews Web development tools, trains associates, and manages the UDRI Web sites.

Mr. Cross recently developed a relational database system as part of a massive office automation project. The system, operating on the Research Institute's local area network (LAN) in a Microsoft Windows environment, includes data management tools to enter, maintain, and report information required by the Contracts Management, Personnel, Property Records, Industrial Security, Purchasing, Accounting, and Technical Information Services offices. The Technical Information Services Office (TISO) portion uses a work flow model which allows the information specialist to log a customer request and track its progress until the request has been fulfilled. TISO performs literature searches, and acquires books, magazine, journals, articles, society memberships, software, databases, videotapes, and/or CD-ROM as necessary to fulfill the customer's request. The system records this information along with customer data so that it can produce a variety of reports for the office manager and customers.

Mr. Cross was the systems analyst and software engineer in charge of developing an EPA-sponsored pollution prevention software package known as SWAMI. Its use by process engineers facilitates pollution prevention efforts and Federal reporting requirements. In conjunction with this project, he was a featured speaker at ten pollution prevention workshops presented by the U.S. EPA.

Another software package created by Mr. Cross piggybacks onto SWAMI to predict the risk of hazardous material release from a metal plating process. The software uses the process definition data created with SWAMI plus additional facts entered by the user and probability data contained in the program to predict the probable annual release. Plans are to expand this for other industrial processes.

Mr. Cross has recently completed the first version of a corrective action expert system known as CASTE (Corrective Action/Superfund Technology Evaluation) for use in the technology screening phase of remediation. CASTE, uses data from an RFA/RFI report to recommend corrective measures and order of magnitude implementation cost estimates. At the heart of CASTE is a set of rules which model an engineer's basic decision-making process during technology evaluation. The CASTE expert system also includes a database containing chemical and physical properties for over 1100 chemicals plus dozens of technology rule sets which evaluate a technology's effect on the environmental problem.

Mr. Cross lead the development of the Solid Waste Planning software known as SW-Options. It too, was funded by and developed for the U.S. EPA. This tool is designed for city planners, local politicians, and citizen awareness groups that need basic understanding of available alternatives for dealing with municipal solid waste. Typically, this user community has little or no experience with these issues nor with the use of desktop computers. This software was created with an emphasis on user friendliness in order to accommodate novice computer users. SW-Options offers explanations on curbside collection programs, municipal recycling facilities, composting, energy recovery, incineration, special hazardous waste collection programs, and landfilling.

In his previous position with the Structural Integrity Division of UDRI, Mr. Cross led the extension and development of the CRACKS90 system of crack growth modeling. Objectives included extension of basic system functions, revisions to improve platform independence, adaptation for use on personal computers, improvement of user friendliness, and special customization for sponsors. His responsibilities also included writing user manuals, programmer documentation, and technical reports.

In his first major assignment at the University, Mr. Cross was a major contributor to the design and development of a state-of-the-art teleconferencing system known as ATMC. His efforts concentrated on the user interface and graphics applications, user documentation, and training. This lead to a related project to develop a user-friendly software interface between the USAF WWMCCS database and the ATMC teleconferencing system in which he led all aspects of the project from proposal to installation and training.

Mr. Cross is an effective communicator able to work with customers in determining requirements and specifications. His experience and his scientific background qualify him for problems in a variety of areas such as environmental software, expert systems, database design and development, computer simulation, mathematical modeling, computer graphics, and data communications. He makes presentations at seminars, performs training, and teaches computer classes on a regular basis. He is proficient with PROLOG, FORTRAN, HTML, assembler, SuperBASIC, CLARION, Professional Developer (a relational database tool), and a number of computer graphic tools such as Plot-10, DI-3000, and DISSPLA. He also has experience with XML, VB Script, JavaScript, PL/I, COBOL, C, Excel, and Microsoft Access and SQL. Mr. Cross has used DOS- and Windows-based IBM-compatible PC's and computers by Digital (VAX and PDP-11), CRAY (Unix), CDC, Cromemco, Wang, Apple, IBM mainframes.

PUBLICATIONS/PRESENTATIONS

F.E. Beitel, K.A. Combs, C.W. Cross, D.J. Johnson, J.S. Loomis, T.K. Medlock, A.L. Shoup, and R.A. Williams, "ATMC Baseline System Functional Specification", F33615-81-C-0005, UDR-TR-84-00141, Dec. 1984.

C.W. Cross, "ATMC Users Manual", UDR-TR-84-00097, Aug. 1984.

C.W. Cross, "Lessons Learned Video Graphics/Teleconferencing (VG/TC) System", UDR-TR-85-00011, Jan. 1985.

C.W. Cross, "ATMC System Software Installations And Configuration Procedures", UDR-TR-85-00007, March 1985.

C.W. Cross, F.E. Beitel, J.S. Loomis, T.K. Medlock, and R.A. Williams, "ATMC System Reference Manual", UDR-TR-85-00037, March 1985.

J.P. Gallagher, P. Miedlar, and C.W. Cross, "Durability And Damage Tolerance Analysis Method Development For F-16 Aircraft", UDR-TR-88-00036, Jan. 1988.

R. John, J.P. Gallagher, C.W. Cross, T. Bohman, and P. Miedlar, "Crack Growth Life Analysis Of Aircraft Wheel With Residual Stresses", UDR-TR-88-00035, March 1988.

C.W. Cross, P. Miedlar, F.J. Giessler, and J.P. Gallagher, "Damage Tolerance Analysis Of Wheels", UDR-TR-88-00053, May 1988.

J.P. Gallagher, P. Miedlar, C.W. Cross, and A. Davison, "Using CRACKS88 For Durability And Damage Tolerance Analyses Of F-16 Aircraft Wing Structure", UDR-TR-88-00140, Dec. 1988.

J.P. Martino and C.W. Cross, "Computer Programs For Bayesian Analysis Of Materials Test Data", 200-14-14U36910, UDR-TR-90-00051, May 1990.

J.T. Swartzbaugh, H.D. Williams, B.L. Cormier, and C.W. Cross, "Computer-Assisted Corrective Action Application Guides for Technology Selection," in AICHE 1990 Hazardous Materials Spills Conference, Houston, TX, May 1990.

J.T. Swartzbaugh, H.D. Williams, C.W. Cross, "Software Tools for Process Analysis and Waste Minimization Activity," proceedings of the 83rd Annual Meeting, Air and Waste Management Association, Pittsburgh, PA, June 1990.

J.P. Gallagher, P. Miedlar, P.W. Hovey, and C.W. Cross, "CRACKS90 System", UDR-TR-90-00099, Oct. 1990.

C.W. Cross and M.L. Papp, “Establishing A Software Management Program”, UDR-TR-90-00125, Dec. 1990.

J.P. Gallagher, P. Miedlar, J.J. Loomis, and C.W. Cross, “The Development Of A Rapid Method For Conducting Durability And Damage Tolerance Analysis For F-16 Aircraft”, F42600-87-D-1616, UDR-TR-91-00152, Dec. 1991.

C.W. Cross and J.T. Swartzbaugh, “User’s Guide for SWAMI, Strategic Waste Minimization Initiative Version 2.0”, EPA/625/11-91/004, Jan. 1992.

J.T. Swartzbaugh, J.A. Sturgill, C.W. Cross, and H.D. Williams, "Selecting Approaches for Remediation Contaminated Sites - A Logic Framework for Remedial Technology Selection," in Encyclopedia of Environmental Control Technology, Gulf Publ. Co., P. Cheremisinoff, ed., 1992, in press.

J.P. Gallagher, P. Miedlar, C.W. Cross, and M.L. Papp, “CRACKS93 System User's Manual”, UDR-TR-93-00107, Oct. 1993.

C.W. Cross and A. McAdams, “Research Institute Strategic Information System (RISIS) User's Manual”, UDR-TR-94-00008, Jan. 1994.

J.P. Gallagher, P. Miedlar, C.W. Cross, and M.L. Papp, “CRACKS95 System User's Manual”, UDR-TR-95-00093, Nov. 1995.

C.W. Cross, “WorldWide Web Strategic Plan”, UDR-TR-96-00039, July 1996.

C.W. Cross, “UDRI WorldWide Web Policy”, UDR-TR-96-00038, July 1996.

17. Ronald L. Thomas

Ronald L. Thomas

Education:

Microsoft Certified System Engineer
Computer Science, New Mexico State University, 1971-1973
United States Naval Training School, 1967-1968
Ohio State University, 1965-1967

Summary of Qualifications: A dynamic professional with over 30 years of technical experience and demonstrated strengths in providing effective network solutions and applications for government and industry. A creative, results oriented individual who values excellence, has high standards and meets objectives.

Work Experience:

Present: **The University of Dayton Research Institute**, Senior Software Engineer, Internet Application Programmer/Analyst

I am responsible for the proposal, design and implementation of custom Internet/Intranet applications. I possess expert knowledge of systems for multi-tier applications and graphical user interface (GUI) design and development. I have expert working knowledge of most technologies pertinent to such development including network design and implementation, relational databases and programming tools like MS Interdev, MS SourceSafe and Rational Test. I am fluent with many programming languages such as Java/Java Script/J++, Visual Basic/VBA/VBScript, HTML/DHTML and have expert working knowledge of technologies such as ADO/RDS/DAO, COM/DCOM/ActiveX as well as Active Server Pages.

1994-1999: **Blue Chip Computers**, Dayton, Ohio. Senior Software Engineer/Technical Lead.

I was responsible for the proposal, design and implementation of custom client/server WAN and Internet/Intranet applications. I effectively managed an 8-member hardware and software engineering development team with an annual budget of \$1M. I have expert working knowledge of all major versions of Microsoft WindowsNT/2000 server and workstation, Novel Operating Systems, Windows95/98, Office95/97, SQL Server 6.5/7.0 and IIS. In addition, I am fluent in many different programming languages including VBA, all versions of Visual Basic, C/C++, Java/Java Script, and HTML; including both the Windows and ODBC APIs. Possessed a Government Secret Clearance

1987-1994: **Ronmar Associates**, Escondido, California. President/Partner of a computer service bureau specializing in small-medium network design and installations and customized software applications for business.

I established a new business targeted to the emerging computer network market for small business. Extensive knowledge of MS-DOS, Novel, and Windows NT operating systems. Specialized in system and software development using wide range of development tools including Microsoft C, Windows SDK, MS-Access, MS-Visual Basic, Dbase, R-Base, Paradox, Superbase, FoxPro.

I set up many small-medium businesses with customized hardware and software. Wrote customized software programs designed to increase productivity and enhance sales for Cipher Data products, National Cash Register, Carlisle Memory Products and Desalination Systems, Inc. And more...

1985-1992: **Archive Corporation/Cipher Data Products, Inc.**, San Diego, California. Largest producer of computer tape drives for industry.

Director, Sub-systems Business Unit

Developed, planned and staffed an innovative business unit that combined existing tape and disk storage technology into new high performance storage solutions for the computer market; first year revenue forecast exceeded \$100M generating over \$52M in profits for the corporation.

Set up and structured a 7-person organization to access new, high margin markets; targets included Fortune 500 end-users and the dealer channels. Acquired and integrated into the product line, 5 new OEM tape, disk and software products for emerging market channels.

Directed an engineering team in the development of new computer technology; resulting in several industrial patents. Named on several patents.

Product Marketing Manager

Developed and implemented a 3 year market plan, increasing product sales from \$80M to \$117M while increasing market share from 52% to 66% over the three year period.

Launched a low cost tape drive into the market that produced 45+ gross margin on sales of more than \$95M on 17,500 units.

Cut product development time in half and reduced development costs by \$450K with new methods for defining product/market requirements.

Wrote a series of technical papers on new computer interface technologies and implementation schemes that were published by Computer Design.

1980-1985: Data Card Corporation, San Diego, California
Product Line Manager, P&L responsibility for a \$6.5M product line with a staff of 4 engineers.

1977-1980: Hughes Aircraft Company, Carlsbad, California

International Field Service Manager

Management responsibility for 15 engineers for the international product service organization generating \$10M annual revenue.

1973-1977: Senior Customer Engineer, Hewlett-Packard Corporation, San Diego, CA

1971-1973: Electronic Engineer, United States Navy Calibration laboratory, White Sands Missile Range, New Mexico

University of Dayton Research Institute (UDRI)

The University of Dayton Research Institute Web Development Center

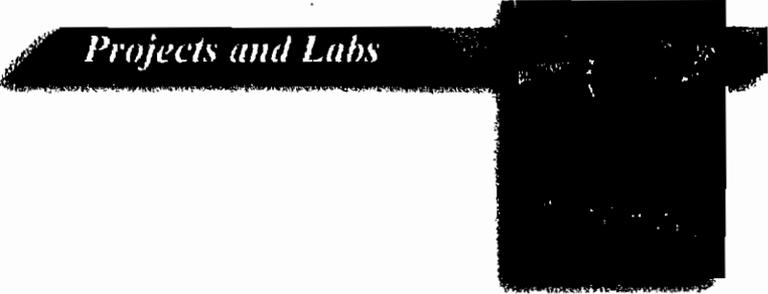


The University of Dayton Research Institute (UDRI) is the second largest not-for-profit research organization in Ohio. UDRI, established in the late 1950's, coordinates the research activities of the University of Dayton, which was founded in 1850. A staff of approximately 400 full-time engineers, scientists, and support personnel performs basic and applied research for government and industry.



UDRI is divided into six divisions, each specializing in distinct scientific areas. The Electrical and Computer Engineering Division (ECED) performs research and development in information and human technologies, computer modeling and simulation, electronic and optical engineering, and human factors. A major portion of the information technology (IT) work is directed by our Web Development Center (WDC). The remainder of this document is devoted to the WDC and its capabilities.

Projects and Labs



Web Development Center

The Web Development Center was formed in 1996 to develop a Web site for UDRI. It wasn't long before other University Departments requested our services. An Associated Press article about the Center resulted in commercial clients. As our skills and experience grew, we began taking on projects requiring greater complexity. Today, the WDC is a "one-stop" shop for electronic corporate brochures, intranets, interactive data-driven Web sites, electronic commerce, electronic publishing, business-to-business commerce, and more. Our business activities include companies such as UCR, Miller Valentine Group, and Reed Elsevier.

Our two-fold mission reflects both the needs of our clients and the mission of a major university:

- Develop Internet solutions to business problems for educational, commercial, non-profit, and government clients.
- Participate in the educational process of the University of Dayton's visual art, computer graphics, and computer science students by providing real-world job opportunities.

Our development environment includes multiple Windows-NT servers running Microsoft server software such as IIS, SiteServer, WebBoard, and SQL. The servers are connected to three T-1 lines provided by OARNet (will be upgraded to a DS3 in early 1999). Client-side development software includes Microsoft and Windows-compatible tools such as Site Server 3.0, IIS, Internet Explorer, Netscape Communicator, Visual Basic, Visual InterDev, FrontPage98, MS-SQL, Photoshop, Freehand, Pagemaker, Survey Tracker, System Architect (CASE tool), Access, Excel, Powerpoint, and Outlook.

Here is a partial list of the 50+ Web projects that are in progress or completed by the Web Development Center.

University of Dayton projects

- UD Flyers: <http://www.udayton.edu/athletics>
- UDRI: <http://www.udri.udayton.edu>
- Web Development Center: <http://www.udri.udayton.edu/WebCenter>
- SiteServer.com: <http://www.SiteServer.com>
- Battle of the Businesses (for Special Olympics of Dayton):
<http://www.udri.udayton.edu/Battle>

- Student Employment On-line Database: <http://studempl.udri.udayton.edu/>

Commercial projects

- Miller Valentine corporate intranet
- Quality Methods International: <http://www.visualworkplace.com>
- UCR, Inc.: <http://www.ucrnet.com> (commerce site coming in January 1999)
- Brian Zampier, artist: <http://homepages.udayton.edu/~zampier/>
- CTC, Inc. (coming in January 1999)
- Ohio Retired Teachers' Association (ORTA): <http://www.orta.org>
- Murdock (coming in January 1999)

For more information, contact:

Clancy Cross
University of Dayton Research Institute
Web Development Center
Dayton, OH 45469-0151

937-229-3273

937-229-3433 (fax)

cross@udri.udayton.edu

<http://www.udri.udayton.edu/WebCenter>



About the UDRI Web Development Center

The UDRI Web Development Center is a full-service software development group specializing in solutions for commercial and academic clients. This is an extension of other UDRI software engineering activities, which have been on-going for over forty years. The Web Development Center was established to specialize in distributed software solutions using database and Internet technologies.

Web-based e-commerce and communication experience:

- Web site construction including content development and graphic design
- Academic applications (both homegrown and using COTS software)
- Electronic storefronts
- Business-to-business commerce solutions
- Secure multi-organizational communication systems
- Distributed database applications
- Knowledge management systems
- Web-based interfaces to legacy databases
- Computer-based training systems
- Systems and process analyses
- Human factors analysis of computer systems
- Digital photography

Web-based software experiences:

- Microsoft products including: NT, IIS, SQL Server, FrontPage, VisualBasic, Internet Explorer, Visual InterDev, ASP, Site Server, and VBScript
- Unix
- MS SQL Server, Access and Oracle Relational Databases
- Graphic design tools: PhotoShop and FreeHand
- Variety of Microsoft and third-party packages supporting Internet-based communication and information systems such as: NetMeeting, WebCT and WebBoard
- Other development tools: Browserola for testing browser compatibility, System Architect (CASE tool), Source Safe, MS-Project, Rational Visual Test.

Some Web Development Center clients have included the U.S. Government, the Dayton IT Alliance, Ford, Miller Valentine, University of Dayton, Circuit Center, CTC, Inc., and Murdock Fountains

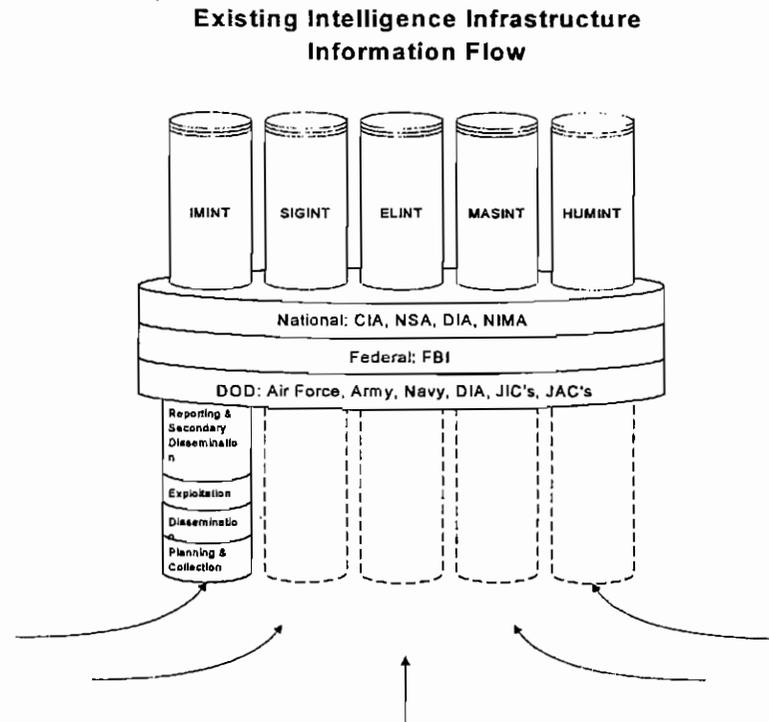
Our website is: www.udri.udayton.edu/webcenter/ and more about what we do can be found on: <http://www.udri.udayton.edu/webcenter/intro.htm>

Please contact Clancy Cross, Head of our Web Development Center at 937-229-3273 or cross@udri.udayton.edu for more information.

Appendix C

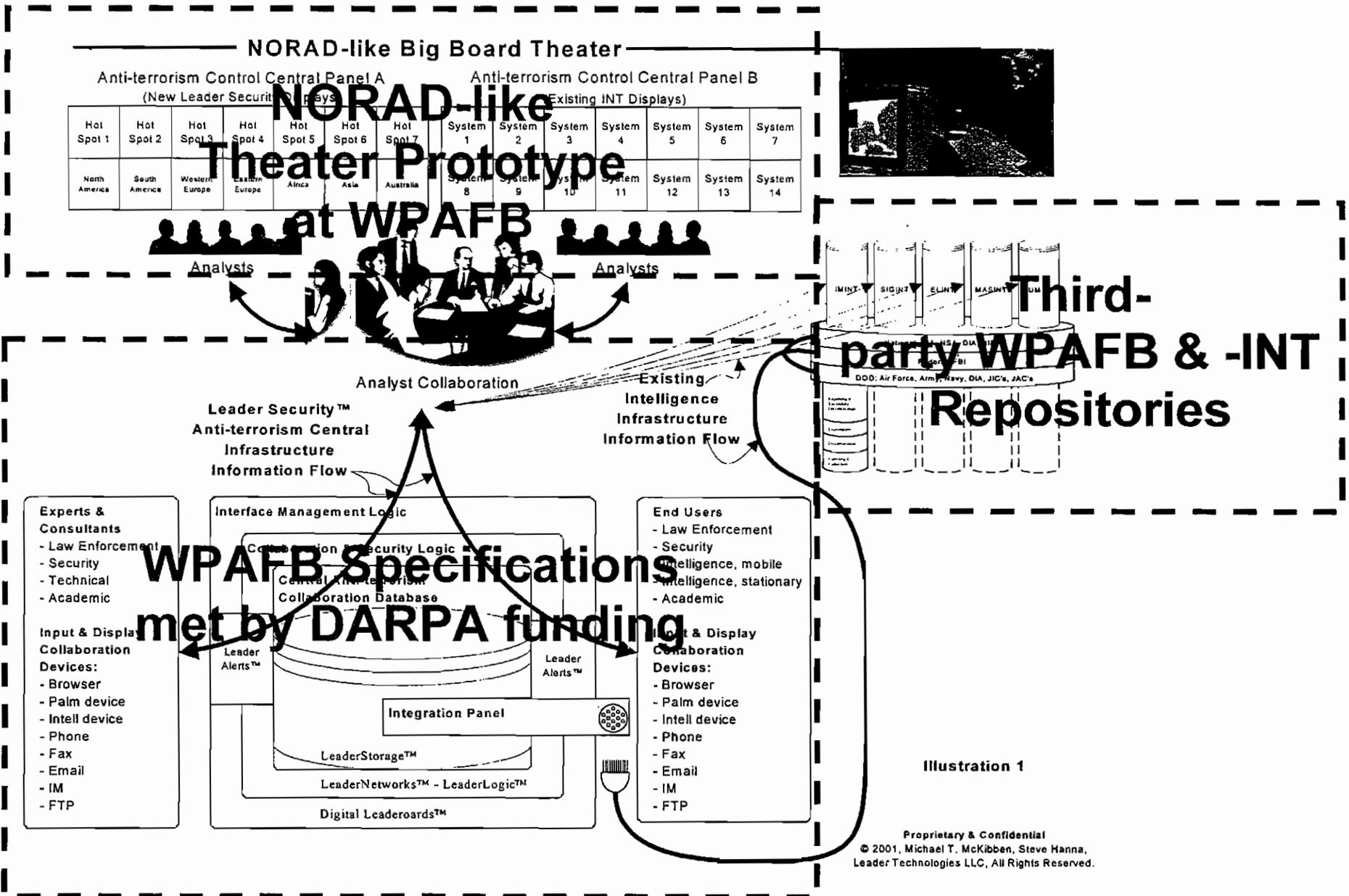
Illustration of the Leader2Leader™ platform used in tandem with existing data repositories. This proposal deals with the installation of the Leader2Leader™ platform across WPAFB organizations. In addition, subsequent to September 11, 2001, NORAD-like theater displays of this system can be prototyped well within the context of the needs this proposal will be fulfilling at WPAFB. This illustration shows how the WPAFB platform envisions in this proposal can be used to feed a NORAD-like display theater for use as an analyst’s war room.

Illustration A Existing “Silo” Intelligence Systems



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Leader Technologies LLC, All Rights Reserved.

Illustration B
NORAD-like Big Board Theater for Anti-terrorism Command and Control



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