

# Appendix

## Exhibit 9: Agency Performance Metrics

OCTO's Project Management Office is using the project office executive tracking system (POETS) to monitor the performance of all projects now under OCTO direction or oversight. The tables below present performance metrics for a subset of particularly high-priority programs within each of the four transformation goals.

### Goal 1: Stabilize IT operations

Citywide Strategic Priority Area: Making Government Work

Manager: Deputy CTO, E-government (1.2)

Director, Management Services (1.6)

Director, District Data Centers and  
Telecommunications (1.3 - 1.5)

Supervisor: Chief Technology Officer (1.1)

#### *Measure 1.1 - Finalize OCTO Project Management Office.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	10/1/02	n/a	n/a
Actual	n/a	n/a	-	-	-

#### *Measure 1.2 - Implement District-wide messaging system (email).*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	03/31/01	n/a	n/a	n/a
Actual	n/a	04/02/01	-	-	-

\*Agencies historically maintained separate email servers and systems.

#### *Measure 1.3 - Implement District-wide real-time network monitoring function.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	4/30/01	n/a	07/30/03*	n/a
Actual	n/a	4/15/01	-	-	-

\*Implementation of network monitoring at Unified Communications Center

*Measure 1.4 - Percent of DC WAN outages identified within 15 minutes.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	85%	100%	100%	100%	100%
Actual	95%	100%	-	-	-

*Measure 1.5 - Percent of DC WAN outage services restored within 48 hours.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	85%	98%	98%	98%	98%
Actual	95%	100%	-	-	-

*Measure 1.6 - Recruit and finalize agreements with five Adopt an Agency private sponsors to partner with District agencies.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	09/30/01	09/30/02	09/30/03	09/30/04
Actual	n/a	6/01/01	-	-	-

**Goal 2: Build enabling IT infrastructure**

Citywide Strategic Priority Area: Making Government Work

Manager: Director, District Data Centers and Telecommunications (2.1 - 2.8)

Deputy CTO, Program Management (2.9 - 2.16)

Supervisor: Chief Technology Officer

*Measure 2.1 - Consolidate the District's data centers.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	60%	80%*	95%**	95%	95%
Actual	60%	80%	-	-	-

\* Enterprise Storage

\*\* MPD Consolidation

*Measure 2.2 - Streamline and standardize data center operating procedures for ODC1.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	09/30/01*	09/30/02**	n/a	n/a
Actual	n/a	09/30/01	-	-	-

\* Prototype ODC1; \*\* Finalize ODC1

*Measure 2.3 - Streamline and standardize data center operating procedures for ODC2.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	09/30/01*	09/30/02**	n/a	n/a
Actual	n/a	09/30/01	-	-	-

\* Prototype ODC2; \*\* Finalize ODC2

*Measure 2.4 - Complete DC WAN architecture design.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	1/4/02	n/a	n/a
Actual	n/a	n/a	12/4/01	-	-

*Measure 2.5 - Complete District-wide server consolidation (DCPS and DOH).*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	12/30/02	n/a	n/a
Actual	n/a	-	-	-	-

*Measure 2.6 - Negotiate terms for new contract for District dial tone.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	06/30/01	n/a	n/a	06/30/04
Actual	n/a	10/08/01	-	-	-

*Measure 2.7 - Negotiate terms for new contract for telecommunications data.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	06/30/01	n/a	n/a	06/30/04
Actual	n/a	10/08/01	-	-	-

*Measure 2.8 - Negotiate terms for new contract for District cell phones.*

FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	08/30/01	n/a	n/a
Actual	n/a	10/22/01	-	-

*Measure 2.9 - Complete assessment and break ground on new site for Unified Communications Center (UCC).*

FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	10/30/01	3/31/02*	7/9/03**
Actual	n/a	-	-	-

\* Historic preservation and zoning issues delayed ground-breaking.

\*\* Complete construction.

*Measure 2.10 - Cutover MVIS to production.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	6/01/02	n/a	n/a
Actual	n/a	n/a	-	-	-

*Measure 2.11 - Launch new data center-based operating environment for MVIS.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	4/15/01	12/22/02*	n/a	n/a
Actual	n/a	4/15/01	-	-	-

\* Production cutover

*Measure 2.12 - Launch DPW Seat Management pilot.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	6/01/01	3/18/02*	n/a	n/a
Actual	n/a	5/24/01	-	-	-

\* Award final contract

*Measure 2.13 - Complete WGIS planimetrics.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	09/15/01	n/a	n/a	n/a
Actual	n/a	09/01/01	-	-	-

*Measure 2.14 - Complete GIS vector property maps.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	n/a	9/4/03	n/a
Actual	n/a	n/a	n/a	-	-

*Measure 2.15: Install GIS technology in DC agencies - Office of Tax and Revenue.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	3/15/02	n/a	n/a
Actual	n/a	n/a	-	-	-

*Measure 2.16 - Activate the DC Cable Network.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	n/a	3/30/03	n/a
Actual	n/a	n/a	n/a	-	-

**Goal 3: Implement citywide applications**

Citywide Strategic Priority Area: Making Government Work

Manager: Deputy CTO, E-government (3.1 - 3.3)

Deputy CTO, Program Management (3.4 - 3.6)

Supervisor: Chief Technology Officer

*Measure 3.1: Revise and publish annual web development standards.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	6/15/01	8/15/02	8/15/03	8/15/04
Actual	n/a	4/15/01	-	-	-

*Measure 3.2 - Launch new information and service delivery features on the District website.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
# New Features	n/a	20	10	5	5
Target	n/a	09/30/01	9/30/02	9/30/03	9/30/04
Actual	n/a	20 as of 7/15/01	-	-	-

*Measure 3.3 - Launch initial web-based transactional routines the Business Resource Center.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	8/15/01	n/a	n/a	n/a
Actual	n/a	8/15/01	-	-	-

*Measure 3.4 - Launch MVIS web-based transactional routines.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	6/01/02	n/a	n/a
Actual	n/a	-	-	-	-

*Measure 3.5 - Launch Usability Testing on Prototype Public Access Workstation.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	6/30/02	n/a	n/a
Actual	n/a	n/a	-	-	-

*Measure 3.6 - Complete Electronic Benefits Transfer pilot.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	8/30/02	n/a	n/a
Actual	n/a	n/a	-	-	-

## Goal 4: Integrate citywide services and information

Citywide Strategic Priority Area: Making Government Work

Manager: Director, Management Services (4.2)

Director, Human Resources (4.3)

OCTO Deputies (4.4)

Supervisor: Chief Technology Officer (4.1)

### *Measure 4.1 - Complete and issue citywide IT strategic plan.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	07/30/01	07/30/02	07/30/03	07/30/04
Actual	n/a	12/30/01	-	-	-

### *Measure 4.2 - Complete and publish policies and procedures for IT procurement reviews (PRIS).*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	06/30/01	n/a	n/a	n/a
Actual	n/a	06/30/01*	-	-	-

\* PRIS policies and procedures identified and completed.

### *Measure 4.3 - Maintain full staffing.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target %	n/a	n/a	95%	95%	95%
Actual	n/a	n/a	-	-	-

### *Measure 4.4 - Update five major IT policy manuals.*

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Target	n/a	n/a	07/15/02	n/a	n/a
Actual	n/a	-	-	-	-

1. Professionals' Guide to Information Technology Architecture Standards
2. Professionals' Guide to Web Development
3. Professionals' Guide to the Adopt an Agency Program Guidelines
4. Web Technical Standards (web-based)
5. Web Style Guide (web-based)

**Exhibit 10: OCTO FY2001 Operational and Capital Savings**

<b>Operating Budget Projects</b>	<b>Productivity Improvements</b>	<b>Savings</b>
<b>Telecommunications Program</b> Standardized the city's telephony platform	<ul style="list-style-type: none"> <li>Standardized regular telephone and cell phone services</li> <li>Reduced outages, maintenance costs, and regularized billings</li> </ul>	\$9,011,000
<b>Data Center Consolidation</b> Integrated and consolidated data centers	<ul style="list-style-type: none"> <li>Integrated data storage and retrieval</li> <li>Permitted agencies to share data</li> <li>Improved the quality of data processing services</li> <li>Attained economies of scale</li> </ul>	\$745,000
<b>Data Warehousing</b> Consolidated data sharing and storage	<ul style="list-style-type: none"> <li>Implemented standardized, scrubbed relational databases</li> <li>Created timely, accurate, and relevant decision support data</li> </ul>	\$100,000
<b>Adopt an Agency Program</b> Private sector IT professionals loaned to manage and implement IT systems and projects	<ul style="list-style-type: none"> <li>Expanded and upgraded the city's IT management capacity</li> <li>Increased the professional skill sets available to implement and manage projects</li> <li>Provided knowledge transfer to employees</li> </ul>	\$4,250,000
<b>DC WAN</b> Upgraded network infrastructure	<ul style="list-style-type: none"> <li>Improved system reliability</li> <li>Upgraded application capacity</li> <li>Enhanced security</li> </ul>	\$520,000
<b>Public Safety Communications Center</b> Consolidated MPD, EMS, and Fire Dept. call centers	<ul style="list-style-type: none"> <li>Improved operating efficiency and employee morale</li> <li>Designated pilot site for planned Unified Communications Center</li> </ul>	\$2,800,000
<b>Enterprise Security</b> Consolidated and standardized management and standards	<ul style="list-style-type: none"> <li>Reduced computer downtime due to upgraded virus protection and intruder alarms</li> </ul>	\$250,000
<b>Closing of Print Shop</b> RIF closed print/copy shop Providing services through the GPO	<ul style="list-style-type: none"> <li>Reduced copy and print projects' turn-around time</li> <li>Reduced per unit cost for printing and copying services</li> <li>Improved timely production of DC Register and DC Municipal Regulations</li> </ul>	\$332,000
<b>Business Process Re-engineering (BPR)</b> Conducted BPR analysis for the Office of Property Management	<ul style="list-style-type: none"> <li>Refocused mission on core competency</li> <li>Improved service delivery through enhanced training</li> <li>Improved operating procedures</li> </ul>	\$3,000,000

**Total \$20,998,000**

<b>Capital Budget Projects</b>	<b>Productivity Improvements</b>	<b>Savings</b>
<b>Procurement Management</b> Reformed procurement processes	<ul style="list-style-type: none"> <li>Streamlined procurement management and tracking processes</li> <li>Reduced procurement timelines</li> </ul>	\$1,252,000
<b>Consolidated Capital Budget Process</b> Centralized approval of all IT related capital budget proposals	<ul style="list-style-type: none"> <li>Ensured that agencies had appropriate and non-duplicative financial and management resources for mission-critical processes and projects</li> <li>Increased the likelihood of successful project implementation</li> </ul>	\$16,883,000
<b>Geographic Information System</b> Created digitized electronic vector maps	<ul style="list-style-type: none"> <li>Improved planning and accuracy of deployment of public safety, public works, and social services resources</li> </ul>	\$1,200,000

**Total \$19,335,000**

### Exhibit 11: Productivity Gains of Selected Projects

Projects	Savings	Comments
Telecommunications program standardized the city's telephony platform	<p>The renegotiation of Verizon's telephone contract resulted in a savings of \$6,899,000 from the previous contract.</p> <p>OCTO lowered the cellular phone calling charges by \$2,100,000 because of a cell calling plan recoup, and saved an additional \$12,000 on long distance charges.</p>	<p>The "Fix the Phones" project standardized the District's telephony platform. OCTO was then able to leverage this standardization to renegotiate the District's contract with Verizon. This contract covers the following services: Analog Centrex Lines, ISDN Lines, Voicebox, and Message Units. Before this standardization, the District did not have formally negotiated rates and services with its primary telecommunications vendor.</p> <p>OCTO is aggressively utilizing lower cell phone rates provided by the Federal General Services Administration WIT's contract to realize additional cost savings.</p>
Data Center consolidation integrated and consolidated data centers	<p>Through the consolidation of services into fewer, better-managed data centers, OCTO can leverage software and hardware across agencies while serving each agency's individual program needs. OCTO has achieved \$745,000 in savings as a result of the reduction in equipment and software maintenance contracts.</p>	<p>OCTO reviewed and determined the data storage and processing capacity needed in the Department of Employment Services, the Department of Human Services, the University of the District of Columbia, and the Metropolitan Police Department.</p> <p>In addition, the Office of the Chief Financial Officer has placed the SHARE data center under OCTO leadership. Because of this review, OCTO consolidated these agencies' existing data centers into two, with MPD joining next fiscal year.</p>
Data warehousing consolidated data sharing and storage	<p>OCTO has achieved \$100,000 in savings from consolidating local area network servers, eliminating duplicative databases and processing capacity, and reducing maintenance costs. Consolidating maintenance and software licensing costs have also contributed to these savings.</p>	<p>The District currently stores duplicative, high-error data in multiple uncoordinated and hierarchical databases in multiple agencies. This configuration has created fragmentation, inefficiency, a lack of standardization, and an inability to share information across platforms and agencies.</p> <p>OCTO has focused on implementing consolidated data storage in those agencies whose databases have citywide impact because they rely on data from, or provide data to, other agencies or other systems. The consolidated data warehousing project will facilitate data sharing and use of databases among District agencies using connected relational databases.</p>
Adopt an Agency program received loaned private sector IT professionals to manage and implement IT systems and projects	<p>To date, twelve major technology firms, including IBM, Verizon, Lockheed Martin, ESRI, and SAIC have each volunteered between 1,000 and 4,000 hours to the program. In total, participating companies have volunteered 17,000 hours to the District. As the</p>	<p>The Adopt an Agency program allows the District to utilize the services of senior managers of private sector information technology firms to assist agencies in managing and implementing critical projects. These firms have volunteered staff to work with District agencies in high level management positions to coordinate the implementation</p>



Projects	Savings	Comments
	<p>District would normally pay approximately \$250 per hour to acquire this level of expertise on a contractual basis, this program has achieved \$4,250,000 in potential contract personnel cost.</p>	<p>of programs, perform assessments of IT infrastructure needs, manage training and knowledge transfer, and implement upgraded policies and procedures.</p>
<p>DC WAN upgraded network infrastructure</p>	<p>OCTO's Network Operations Center served as the project manager for several agencies that implemented wide area networks. OCTO's management eliminated the need for agencies to hire outside contractors to perform this work, thereby saving \$270,000.</p> <p>OCTO saved \$250,000 by providing direct management of several network implementation and upgrade projects, including the Wilson Building, One Judiciary Square's backup network, and the Department of Health. OCTO's management reduced annual technical engineering and administration fees that would normally be paid to outside contractors.</p>	<p>OCTO has continuously upgraded and improved the District's wide area network (WAN), the networking backbone of the District government, since its inception. OCTO established the Network Operations Center (NOC) to monitor and ensure network performance. The WAN allows OCTO to establish and implement improved communications capabilities between all District government agencies and with citizens and businesses via the Internet.</p> <p>OCTO is upgrading the system to improve its reliability, security, and performance, as well as enhanced remote access for District employees; a re-engineered infrastructure to allow multimedia applications like video conferencing; and help desk support to assist agencies in using WAN capabilities.</p>
<p>Public Safety Communications Center consolidated MPD, FEMS call centers</p>	<p>In replacing the old telecommunications infrastructure with a state-of-the-art system, the District eliminated \$2,800,000 in potential legal liability because of enhanced response times and improved emergency services.</p>	<p>OCTO, the Metropolitan Police Department (MPD), and Fire and Emergency Medical Services (FEMS) recently consolidated the MPD and FEMS call centers into the Public Safety Communications Center (PSCC). The PSCC co-locates and consolidates public safety (emergency 911 for MPD and FEMS, and eventually non-emergency 311, and (202) 727-1010) call-taking functions.</p> <p>The PSCC uses up-to-date technology to provide call-taking and dispatch. Once the planned Unified Communications Center is complete, the PSCC will serve as the back-up communications facility.</p>
<p>Enterprise security consolidated and standardized management and standards</p>	<p>OCTO renegotiated the contract for McAfee Corporation's suite of virus protection software, and lowered the annual cost to the District by \$250,000.</p>	<p>As part of its overall responsibility to protect the District's investment in IT hardware and software, OCTO centralized management of the District's electronic mail system, and improved system-wide network virus protection and security.</p> <p>OCTO implemented standardized policies and procedures for remote dial-in access for the first time.</p>
<p>Closing of Print Shop RIF closed print/copy shop. Providing alternative services</p>	<p>By transferring print functions to GPO, OCTO lowered the per-unit cost of copying from \$0.45 to \$0.03 per page.</p>	<p>OCTO reviewed the Print Shop's operations and costs, and bench-marked them to other municipalities, the GPO, and the private sector. This review</p>

Projects	Savings	Comments
through the Government Printing Office (GPO).	OCTO estimates that it has saved \$332,000 in FY 2001 to date, and expects to save an additional \$365,000 in FY 2002.	revealed that the per-unit costs of the in-house operations were significantly above those of the private sector and the GPO. A citywide RIF effectively closed the print shop operation, and a MOU with the GPO was established to provide competitive rate services to District agencies for printing and copying.
Business Process Re-engineering (BPR) conducted BPR analysis for the Office of Property Management's FOMA	The workforce analysis revealed a structural imbalance in FOMA's operations. The Office of Property Management performed a reduction in force in FOMA, and many employees took advantage of a District-wide early out retirement program. As a result, FOMA's FTEs decreased from 110 to 51. This reduction saved OPM \$3,000,000 in annual salary and benefits costs.	OCTO coordinated and managed a detailed analysis of the operations and workforce workload of the Office of Property Management's (OPM) Facility Operations and Maintenance Administration (FOMA). The study reviewed FOMA's operating policies, procedures and processes, and compared available workforce to projected workload.  It also analyzed FOMA's workforce workload, and compared the number, skills, and abilities of employees against available and anticipated work.
Procurement management reformed procurement processes	Through improved management of the procurement process, OCTO saved a total of \$1,252,000 by seeking and receiving lower quotes for services, renegotiating existing contracts, and requiring vendors to provide quotes competitive with General Service Administration prices.	OCTO's Office of Contracting and Procurement has aggressively negotiated with existing vendors to lower prices while maintaining high levels of service delivery.
Consolidated capital budget process centralized approval of all IT related capital budget proposals	OCTO's review of the capital IT budget submissions of the agencies resulted in a reduction of funding for 5 projects: Data Marts, and Rolling Inventory, Fleet, Case Workflow, and E-document Management, totaling \$7,400,000.  Agencies also withdrew capital requests totaling \$9,483,000.	OCTO managed the production of the District's first consolidated IT Capital Budget and Financial Plan. In the past, District agencies submitted requests for capital funding of IT projects separately and directly to the Capital Review Team, composed of senior-level members of the EOM, the Council, and the Office of Budget and Planning.  Under the consolidated IT capital review process, all agencies were required instead to submit their capital IT budget requests to OCTO for review and approval.
Geographic Information System created digitized electronic vector maps	OCTO reviewed the project plans and scopes of work for all of the agencies participating in this project, and found that several agencies were planning to purchase separate licenses for the software by ESRI.  OCTO eliminated this duplication, and developed a centralized, networked system to store the software and information. These actions resulted in the savings of \$1,200,000.	OCTO is managing and coordinating the implementation of a citywide Geographic Information System (GIS) as part of a regional consortium that includes the federal government and the Council of Governments.  The project will create District-specific digital maps that support mission-critical mapping for MPD, FEMS, DPW, DCRA and other agencies.

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# Glossary

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## Architecture

The design of a computer system. The term architecture can refer to either hardware or software, or to a combination of hardware and software. The architecture of a system always defines its broad outlines, and may define precise mechanisms as well.

## ASCII

### (American Standard Code for Information Interchange)

Pronounced ask-ee, ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase M is 77. Most computers use ASCII codes to represent text, making it possible to transfer data from one computer to another.

## Availability

The ability of a component or service to perform its required function at a stated instant or over a stated period of time. It is usually expressed as the availability ratio, i.e. the proportion of time that the service is actually available for use by customers within the agreed service hours.

## Business Intelligence Systems

Systems and data banks that combine and mine data from widely scattered sources to create new decision-making tools.

## BPR (Business Process Re-engineering)

A project whose goal is to redesign existing processes or create new processes that will reduce cost, increase efficiency, and, where possible, maximize the benefits of technology.

## Case Management

An application that allows case information about a person/work order/incident to be accessed, shared, and updated by more than one person within a group.

## Change

The addition, modification or removal of approved, supported or baselined hardware, network, software, application, environment, system, desktop build, or associated documentation.

## Change Management

The process of controlling changes to the infrastructure or any aspect of services, allowing approved changes to occur with minimum disruption.

## Chat

Real-time communication between two users via computer. Once a chat has been initiated, either user can enter text by typing on the keyboard, and the entered text will appear on the other user's monitor. Most networks and online services offer a chat feature.

## Client/Server Network

A network arrangement with a server and one or more clients, in which both the server and the clients are complete computers, and in which client computers are able to share information.

## Clustering

A standard method for combining microcomputers into cooperative computer systems, typically including management systems to add or delete nodes (computers) to adjust computing resources to the demands of a particular problem.

## CIO (Chief Information Officer)

The executive officer in charge of all information technology in an organization.

## Data Center

The computer hardware, usually in a central location, by which applications and sometimes networks are run and controlled. Data center resources include operations staff and management. Sometimes systems and applications support personnel may be part of the data center staff. Generally, data centers also house the equipment to store, manage and retrieve the data used by an application.

## Data Mirroring

The act of copying data from one location to a storage device in real time, so that the stored data is always an exact copy of the data from the production device. Data mirroring is useful in the speedy recovery of critical data after a disaster. Data mirroring can be implemented locally or offsite at a completely different location.

## Data Warehouse/ Executive Information System

A type of business intelligence system that is a collection of data designed to support management decision-making. Data warehouses contain a wide variety of data that present a coherent picture of business conditions at a single point in time.

## Distance Learning

A type of education where students work on their own at home or at the office and communicate with faculty and other students via email, electronic forums, videoconferencing and other forms of computer-based communication.

## Electronic Document Management

The computerized management of electronic and paper-based documents. Document management systems generally include an optical scanner and an OCR system to convert paper documents into an electronic form, a database system to organize stored documents, and a search mechanism to find specific documents quickly.

## ERP (Enterprise Resource Planning)

A business management system that integrates all facets of the business, including personnel, payroll, benefits, accounting, billing, and financial management.

## Fiber-optic

The medium and the technology associated with the transmission of

information as light impulses along a glass or plastic wire or fiber. Transmission on fiber-optic wire requires repeating at distance intervals.

### **GIS (Geographic Information System)**

A system consisting of data, hardware, software, network connectivity, and personnel, that is capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e., data identified according to their locations.

### **Help Desk/Call Center**

A function that provides problem reporting and assistance and automated routing of calls.

### **HTML (Hyper Text Markup Language)**

One of the authoring languages used to create documents on the World Wide Web.

### **Interactive Voice Response (IVR)**

A telephony technology in which someone uses a touch-tone telephone to interact with a database to acquire information from or enter data into the database. IVR technology does not require human interaction over the telephone, as the user's interaction with the database is predetermined by what the IVR system will allow the user access to. For example, banks and credit card companies use IVR systems so that their customers can receive up-to-date account information instantly and easily without having to speak directly to a person. IVR technology is also used to gather information, as in the case of telephone surveys in which the user is prompted to answer questions by pushing the numbers on a touch-tone telephone.

### **Interactive Voice Recognition**

Similar to interactive voice response above; however, the system recognizes the voice commands of the caller instead of waiting for a caller to select a result via the touch-tone pad. Thus, one does not need a touch-tone phone to interact with interactive voice recognition.

### **Instant Messaging**

A type of communications service that enables an individual to create a private chat room with another individual. Typically, the instant messaging system alerts the user whenever somebody on his/her private list is online. The user can then initiate a chat session with that particular individual. There are several competing instant messaging systems, and no standard, so individuals who want to send instant messages to each other must use the same instant messaging system.

### **Interoperability**

The ability of software and hardware on different machines from different vendors to share data.

### **Inventory Management**

An application that maintains information on disposable assets such as building supplies and medical supplies.

### **Kiosk**

A booth or workstation at a 24-hour accessible location that provides access to services and information using the Internet.

### **LAN (Local Area Network)**

A computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a wide area network (WAN).

Most LANs connect workstations and personal computers. Each node (individual computer) in a LAN has its own Central Processing Unit (CPU) with which it executes programs, but it is also able to access data and devices anywhere on the LAN. This means that many users can share expensive devices, such as laser printers, as well as data. Users can also use the LAN to communicate with each other, by sending email or engaging in chat sessions.

### **LAN Management**

The monitoring and support of an active communications local area network. Activities include configuration management, performance monitoring, performance tuning, and installation of application packages and custom development applications.

### **Mainframe**

A very large and expensive computer capable of supporting hundreds, or even thousands, of users simultaneously.

### **Mobile Data Terminals**

Wireless computers used by emergency management and public safety agencies.

### **Network**

A group of two or more computer systems linked together.

### **Nodes**

In networks, a processing location. A node can be a computer or some other device, such as a printer. Every node has a unique network address, sometimes called a Data Link Control (DLC) address or Media Access Control (MAC) address.

### **PDF (Portable Document Format)**

A file format, developed by Adobe Systems, that captures formatting information from a variety of desktop publishing applications, making it possible to send formatted documents and have them appear on the recipient's monitor or printer as they were intended. To view a file in PDF format, a user needs Adobe Acrobat Reader, a free application distributed by Adobe Systems.

### **PIN (Personal Identification Number)**

The Personal Identification Number that allows a user to access a computer and applications and/or connect to a network. The PIN is a first step in restricting information technology resources to those who are authorized to use them.

### **PKI (Public Key Infrastructure)**

A system of registration authorities that verify and authenticate the identity and authority of each party involved in an Internet transaction. PKIs are currently evolving, and there is no single PKI, or even a single agreed-upon standard for setting up a PKI. However, it is generally recognized that reliable

# Glossary

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PKIs are necessary before electronic commerce can become widespread.

## Protocol

A common set of rules and signals that computers on a network use to communicate.

## Router

On the Internet, a device or, in some cases, software in a computer, that determines the next network point to which an information packet should be forwarded toward its destination. The router is connected to at least two networks and decides which way to send each information packet based on the router's current understanding of the state of the networks to which it is connected.

## Scalability

The ability of a hardware or software system to adapt to increased demands. For example, a scalable network system would be one that can start with just a few nodes but can easily expand to thousands of nodes.

## Seat Management

Centralized management of desktop inventory and upgrades.

## Server

One of a variety of hardware or software devices prepared to receive requests and respond to them by delivering a particular type of information; in a network setting, computers and devices that allocate computing resources for the network.

## SSL (Secure Socket Layer)

A protocol for transmitting private documents via the Internet. SSL works by using a public key to encrypt data transferred over the SSL connection. Both Netscape Navigator and Internet Explorer support SSL, and many websites use the protocol to safely obtain confidential user information, such as credit card numbers. By convention, web pages that require an SSL connection start with https: instead of http:.

## Video Conferencing

The ability to conduct a conference between two or more participants at different sites by using computers and networks to transmit audio and video data.

## VPN (Virtual Private Network)

A network that is constructed by using shared public wires, as opposed to private lines, to connect nodes. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that other users of the network cannot intercept the data.

## WAN (Wide Area Network)

A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs).

Computers connected to a wide area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet.