Managing the Microsoft Chicagoland Data Center

The site of Microsoft's data center project in Northlake, Ill.

William F. Slater, III, PMP
Data Center Manager Candidate
Microsoft BLU Data Center Facility at Bristow, Virginia
February 28, 2008

Agenda

- Introduction, About me – a Career in IT
- Why Build These Large Data Centers: Where the Future of Computing Is Going
- The Operational Description
- Managing the Microsoft Chicagoland Data Center
  - The Team
  - The Needs
  - The Plan
  - Reporting
- Conclusion
- Questions

Introduction

- About me
  - IT professional since July 1977
  - Currently a Program Manager at the Hines, IL VA, managing a Team that supports messaging servers for 300,000 Exchange E-mail Users and 6500 Blackberry Users
  - Managed Data Centers at BP from August 2001 – November 2006, was also a Change Management Manager and a System Administrator during that time.
  - Part-time senior adjunct instructor with the Computer Systems Institute of Chicago
  - Have achieved IT-related certifications, including PMP, CDCP, CISSP, SSCP, MCSE 2003 Security & Messaging, MCAD, MCDST, and MCT
  - Data Center Technology Program – Marist College & and the Institute of Data Center Professionals, February 2008 – Received the Certified Data Center Professional Certification
  - MS in Computer Information Systems, University of Phoenix, 2004
  - BS in Engineering Technology with a major in Computer Systems Technology, Memphis State University, 1977 (now the University of Memphis)
  - Published author & editor: Magazines, books, courseware
  - Happily married (since December 2000) to Joanna K. Roguska, who is a professional web developer at the Chicago Tribune
  - Native of Memphis, Tennessee, born the same month and year as Bill Gates
  - Resident of Chicago / Chicagoland area since 1986 (except for the period between May 1991 and December 1994)
- About this Presentation
  - Here to Interview for the Microsoft Chicagoland Data Center Manager position

Technical Job Skills

- Project Management
- Program Management
- Data Center Management
- Mentoring
- Troubleshooting
- Problem Solving
- Systems Administration
- System Architecture and Design
- Database Design, Implementation, and Administration
- Network Design, Implementation and Administration
- Intranet Design and Implementation

- Technology Assessment
- System Analysis & Design
- OO System Analysis & Design
- System Development using, VB .NET 2003, Visual Basic 6, Java 2, and/or J2EE
- PERL Scripting
- Web Authoring/Web Publishing
- System Performance Tuning
- GUI Analysis, Design and Review
- Technical Writing, Documentation, and Editing
- Technical Training
- Safety Management

# A Career in Information Technology

William F. Slater, III, PMP
Professional Information Technology Career History
Last Updated on January 1, 2008

No.	Employer	Location(s)	Length In Months	Hours / Week	Start and End Dates	Position(s)
1	U.S. Air Force	Offutt AFB, NE	39.5	45	7/15/77 – 10/22/80	Computer System Staff Officer
2	Tennessee Gas Transmission Co.	Houston, TX	12.5	45	11/3/80 – 11/17/81	Programmer / Analyst II
3	Texas Eastern	Houston, TX	58	40	12/28/81 – 10/15/86	Database Analyst
4	Northrop DSD	Rolling Meadows, IL	28	45	11/3/86 – 02/27/89	Database Analyst
5	Marshall Field's	Chicago, IL	15	40	03/14/89 – 06/07/90	Database Analyst
6	Digital Equipment Corp.	Chicago, IL; Colorado Springs, CO; Merrimack, NH	41	48	06/18/90 – 3/11/94	Principal Software Specialist / Project Leader
7	Systematics Telecommunications	Twinsburg, OH	6	55	03/14/94 – 09/07/94	Client/Server Architect
8	Corporate Computing International	Bannockburn, IL	5	75	12/29/94 – 05/31/95	Senior IT Consultant
9	Net Advantage Corp.	Chicago, IL	8.5	50	06/01/95 – 02/07/96	Consultant
10	University of Illinois at Chicago	Chicago, IL	5.5	48	03/27/96 – 9/06/96	Network Analyst
11	Automated Concepts Inc.	Chicago, IL	21	45	09/09/96 – 06/19/98	IT Consultant / Network Analyst
12	MicroAge Computer Centers	Chicago, IL	11	45	6/21/1998 – 4/20/1999	IT Consultant / Project Manager / Network Analyst
13	American Digital Corporation	Chicago, IL	2	50	6/14/1999 – 8/16/1999	Senior Technical Consultant
14	Slater Technologies	Chicago, IL	11	48	8/16/2000 – 7/1/2001	Project Manager / Senior Technical Consultant
15	Chicago Manufacturing Center	Chicago, IL	8	48	7/3/2000 – 2/16/2001	Senior Business Advisor / Database Administrator
16	Net1Source Corp.	Elk Grove Village, IL	2	45	2/19/2001 – 4/13/2001	Senior Technical Consultant
17	SAIC	Naperville, IL	21.5	48	5/21/2001 – 2/28/2003	Process Technical Lead / Data Center Manager / Change Management Manager
18	Getronics	Naperville, IL	42	50	3/1/2003 – 11/3/2006	IT Consultant / Data Center Manager / Change Management Manager
19	CSSS	Hines, IL	14	50	11/28/2006 – Present	Program Manager at Hines VA managing a 22-person Infrastructure Team & Projects
		Total Months	351.5	48.42	Average Hours / Week	

A Career in Information Technology

William F. Slater, III, PMP
Professional IT Career
July 16, 1977 - Present
Jobs with Length of Time
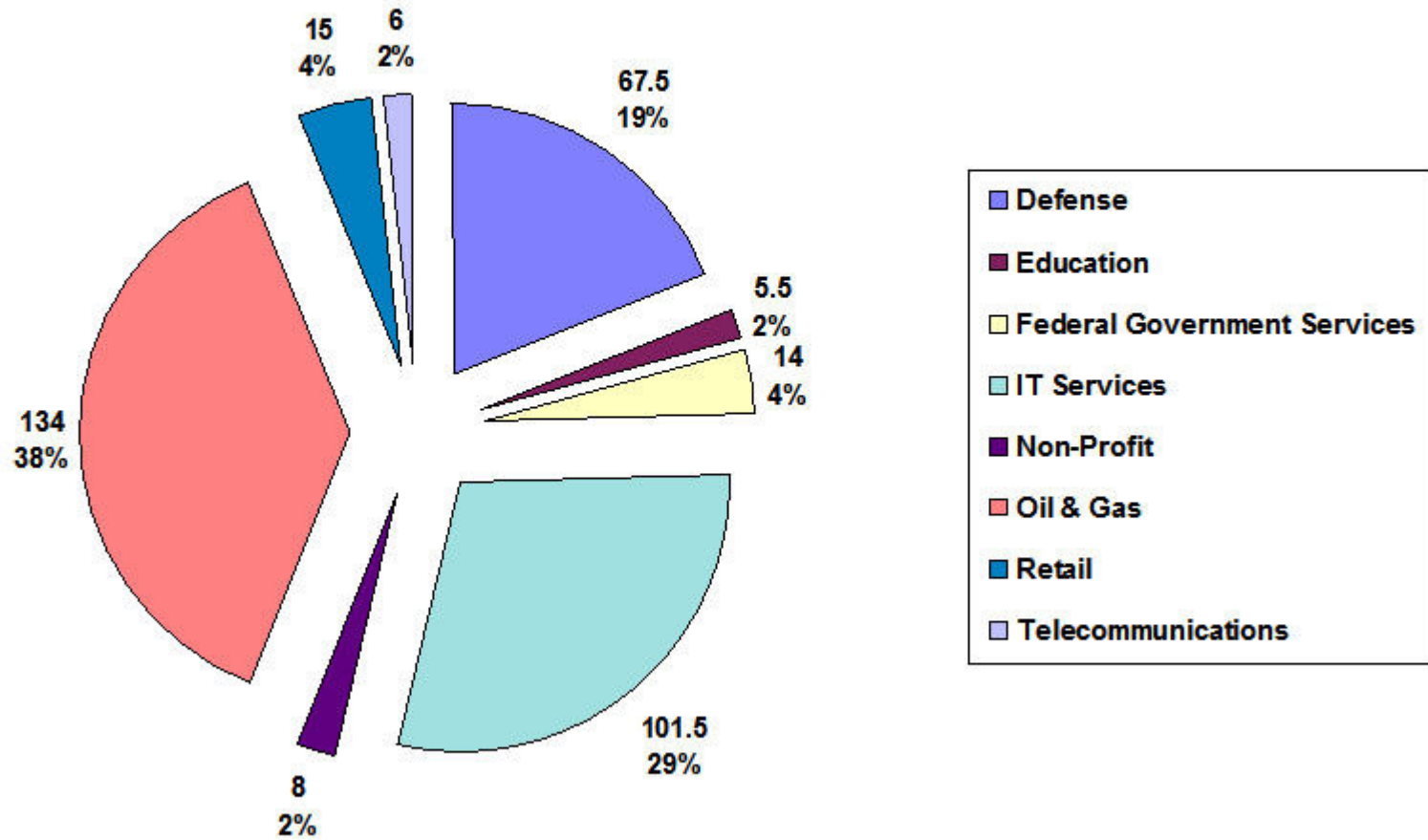Chronologically

Last Updated: January 2008
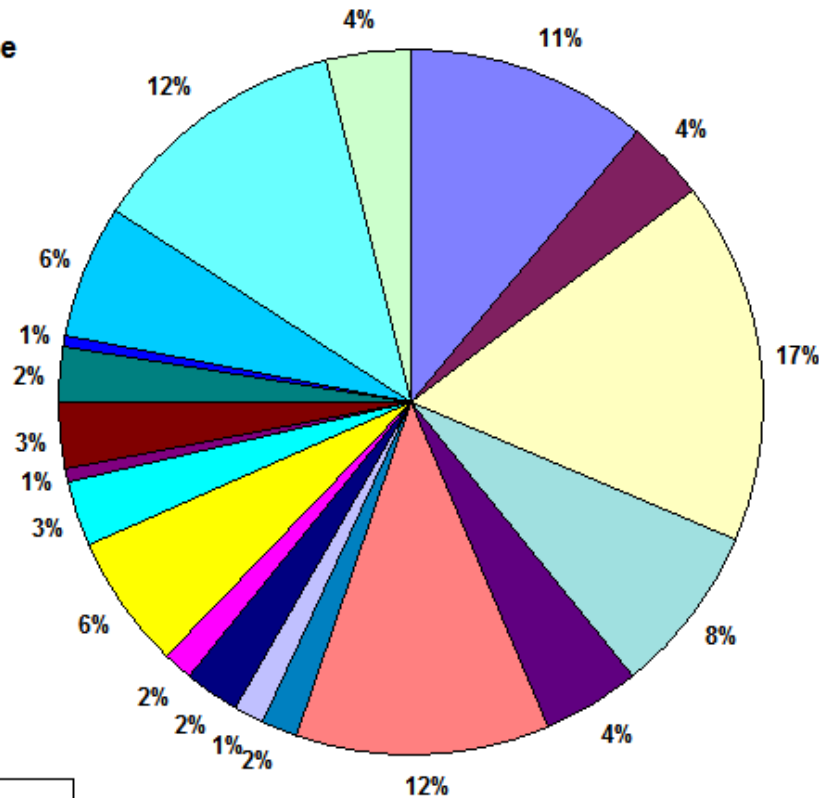
Legend
- U.S. Air Force
- Tennessee Gas Transmission Co.
- Texas Eastern
- Northrop DSD
- Marshall Field's
- Digital Equipment Corp.
- Systematics Telecommunications
- Corporate Computing International
- Net Advantage Corp.
- University of Illinois at Chicago
- Automated Concepts Inc.
- MicroAge Computer Centers
- American Digital Corporation
- Slater Technologies
- Chicago Manufacturing Center
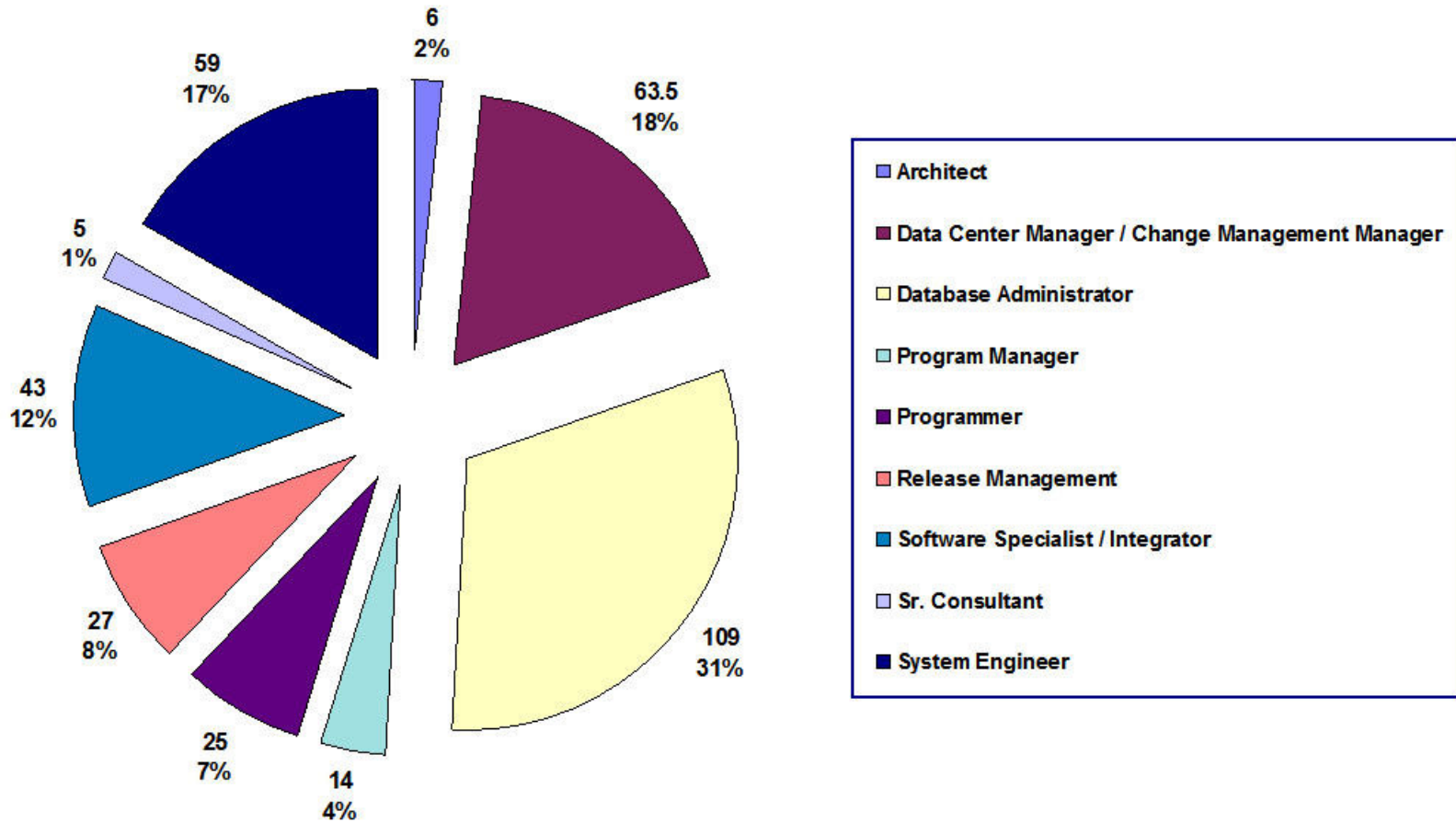- Net1Source Corp.
- SAIC
- Getronics
- CSSS

William F. Slater, III, PMP
Professional IT Career
July 1977 - Present
Analysis of Experience - Length of Time in Various Industries
(numbers show both actual months and percentage of total career)

Legend:
- Defense
- Education
- Federal Government Services
- IT Services
- Non-Profit
- Oil & Gas
- Retail
- Telecommunications

Pie chart values:
- 67.5 / 19% (Defense)
- 5.5 / 2% (Education)
- 14 / 4% (Federal Government Services)
- 101.5 / 29% (IT Services)
- 8 / 2% (Non-Profit)
- 134 / 38% (Oil & Gas)
- 15 / 4% (Retail)
- 6 / 2% (Telecommunications)

Last Updated on January 5, 2008

William F. Slater, III, PMP
Professional IT Career
July 1977 - Present
Analysis of Experience - Length of Time in Various Types of Roles
(numbers show both actual months and percentage of total career)

Legend:
- Architect
- Data Center Manager / Change Management Manager
- Database Administrator
- Program Manager
- Programmer
- Release Management
- Software Specialist / Integrator
- Sr. Consultant
- System Engineer

Pie chart values:
- 6 / 2%
- 63.5 / 18%
- 59 / 17%
- 5 / 1%
- 43 / 12%
- 27 / 8%
- 25 / 7%
- 14 / 4%
- 109 / 31%

Last Updated on January 5, 2008

Soft Job Skills & Attributes

- Very strong People Skills
- Very strong Leadership Skills
- Writing
- Speaking
- Good Listener
- Teaching
- Strong intuition
- Empathetic
- Enthusiastic

- Mentoring
- Preparing and leading meetings
- Friendly
- Helpful
- Kind
- Trustworthy
- Loyal

Accomplishments

- **2008**
  - (See 2007)

- **2007**
  - Managed a Team of 20 people which provides technical support for Exchange Servers and Blackberry Server for over 300,000 users, on a 24 x 7 basis at the Hines, IL VA facility.
  - This Team resolved about 5500 Remedy Tickets in 2007.
  - Was the technical project leader on a Data Center Migration project, to migrate 220 servers into a high-security Data Center
  - Helped rewrite the standard operating procedures for the Team, to transform the organization into a "tiered support model."
  - Streamlined Team member reporting and improved both customer service and productivity.
  - Coached Team members regarding career growth and technical education outside work. Result: 15 people have passed IT certification exams.
  - Outside work, I taught classes for Computer Systems Institute and worked in the IDCP Data Center Technology Program

Accomplishments

- **2006**
  - Managed three major sets of server and server-related equipment migrations into the largest of three Data Centers I Manage
  - Started in the 18-month Data Center Technology Program sponsored at Marist College by the Institute of Data Center Professionals and the National Science Foundation – received a $16,000 scholarship to participate in this program
  - Received $1700 bonus for the most complex of these migrations which completed in July 2006
  - Outside of work, I taught technical classes at the Computer Systems Institute, based in Chicago and in Lombard, IL.
  - Outside work, as President of the Chicago Chapter of the Internet Society (ISOC-Chicago), I worked with the leadership of ISOC-Polska to help complete a project for an e-Learning Resource Brokerage Website involving U.S.-based institutions of higher learning.
  - Earned the ITIL Foundation, the PMP, and the Linux+ certifications as well as two certifications in Data Center Management

- **2005**
  - Continued efforts in Change Management
  - After approving and processing over 15,000 Change Requests on the BP Infrastructure in 4.25 years, I turned over the Change Manager role to another person in October 2005
  - Managed the largest ever server and server-related equipment migrations into the largest of three Data Centers I manage, this included 8 racks and almost 50 servers from a DRP site.
  - Managed 15 projects related to the upgrade and repair of the Data Center Facilities in the largest of three Data Centers I Manage
  - Outside of work, I taught technical classes at the Computer Systems Institute, based in Lombard, IL.
  - Outside work, I created and delivered a three-day seminar on IT security and taking the SSCP exam
  - Earned the MCSE 2003, MCAD, and MCSD certifications

Accomplishments

- **2004**
  - Managed several projects that included the upgrade and/or addition of about 60 servers into the largest of three Data Center I Manage
  - Continued efforts in the project for the Re-centralization of the Management of the BP Naperville Data Center.
  - Continued efforts in Change Management
  - Managed several projects that included the removal of about 40 servers out of the largest of three Data Center I Manage
  - Solved emergency cooling issues related to the loss of cooling in the largest of three Data Center I Manage
  - Planned and supervised the addition of CCTV surveillance capability to the largest of three Data Center I Manage
  - Upgraded the Site Disaster Recovery Plan with details of all facilities and IT Infrastructure changes
  - Established a Job Safety Analysis Templates Project to help streamline the enforcement of and compliance with BP's DCT Data Center Safety objective
  - Earned the MCSE 2000, MCDBA, the SSCP and CISSP certifications
  - Graduate from the University of Phoenix with an M.S. in Computer Information Systems with a 3.92 on a 4.0 scale.

- **2003**
  - Continued efforts in the project for the Re-centralization of the Management of the BP Naperville Data Center.
  - Continued efforts in Change Management
  - Was a finalist in the prestigious BP 2003 Digital Business Helios Awards competition. I wrote the nomination that highlighted accomplishments of the project I managed: Re-centralization of the Management of the BP Naperville Data Center. Our Team was flown to London to attend the 2003 Helios Award Ceremonies.
  - Began a 21-month MS program at the University of Phoenix in Computer Information Systems
  - Earned the MCSA 2000, the IT Project+, the A+, Server+, and Network+ certifications

Accomplishments

- **2002**
  - Implemented a project produced a lot of savings as servers were retained and evaluated for reuse in other projects instead of automatically being sent out for scrap and salvage
  - Continued efforts in the project for the Re-centralization of the Management of the BP Naperville Data Center.
  - Continued efforts in Change Management
  - Designed and Created a Customized Time-Tracker Application to track time in a high-pressure, multiple-project, multi-tasking work environment
  - Outside of work, I taught technical classes at the Illinois Institute of Technology, and for Solex Academy, I created and taught a four month class in Java 2 and Object-Oriented Development for teaching displaced workers.

- **2001**
  - At Chicago Manufacturing Center, I instituted and completed a project to clean up dirty and missing data from the CRM data base that was managed by SQL Server
  - Started on the BP account with SAIC, supporting the infrastructure with Systems Administration efforts. Also used PERL and KIXSTART to produced reports showing the status of servers, and to search large proxy server log files to look for web-related employee misbehavior.
  - Began the project for the Re-centralization of the Management of the BP Naperville Data Center. In addition to working in and on BP's third largest Data Center in the world, I routinely work with over 30 vendors and organizations to get this work done.
  - Began the project related to Change Management as a Change Management Manager
  - Outside of work, I taught technical classes at the Illinois Institute of Technology and for the Wheaton School District.

Accomplishments

- **2000**
  - For the City of Chicago, I completed a project that used HP OpenView Desktop Administrator to automate the Asset Management and Inventory efforts for over 9300 desktop computers located throughout the City of Chicago.
  - At Chicago Manufacturing Center, I instituted and completed a project to streamline management and reporting of CRM data stored in an SQL Server Database. I also created a set of user interfaces which used SQL queries to allow users easy access for their most common data and reporting needs
  - Outside of work, I taught technical classes at the Illinois Institute of Technology and for the Wheaton School District.

- **1999**
  - At Maywood Police Department, I implemented the Compaq Server Cluster that became the foundation of their 911 Call Center information system.
  - For the City of Chicago, I started a project that used HP OpenView Desktop Administrator to automate the Asset Management and Inventory efforts for over 9300 desktop computers located throughout the City of Chicago.
  - Outside of work, I taught technical classes at the Wheaton School District.
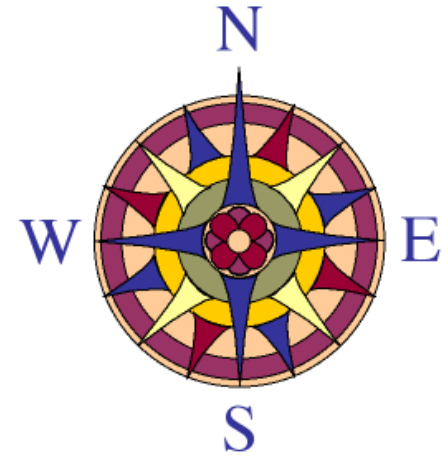
# Working on Solving a Project Management Problem
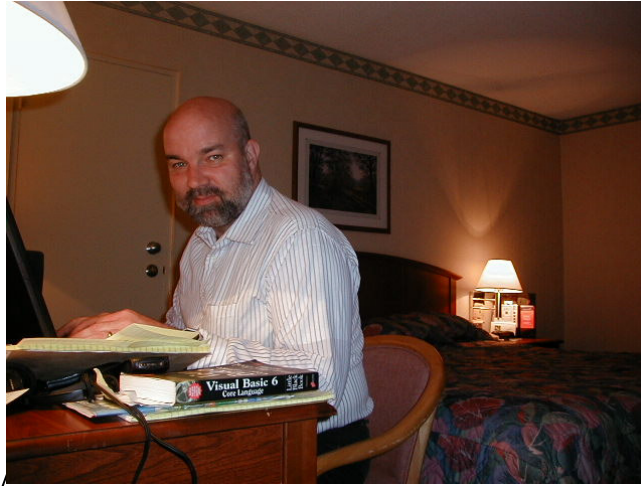
And belief overmasters doubt, and I know that I know,
And my spirit is grown to a lordly great compass within,
That the length and the breadth and the sweep of the marshes of Glynn…
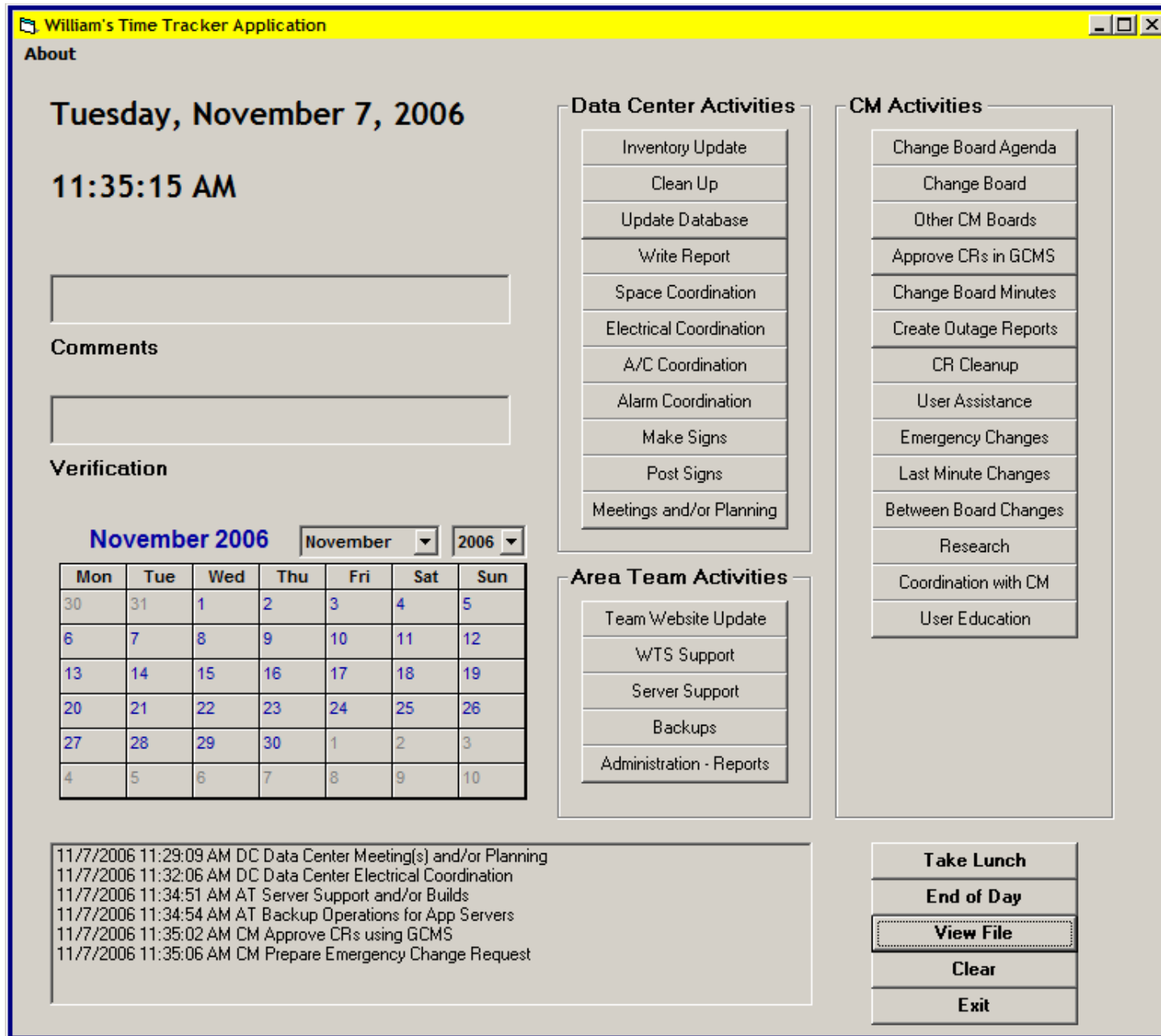
Sidney Lanier, "The Marshes of Glynn"

I was on vacation when I decided to do the analysis, design, and implementation of this **Time Tracker Application**. This photo was taken in a hotel room in Lansing, MI as I was working on finishing this application.
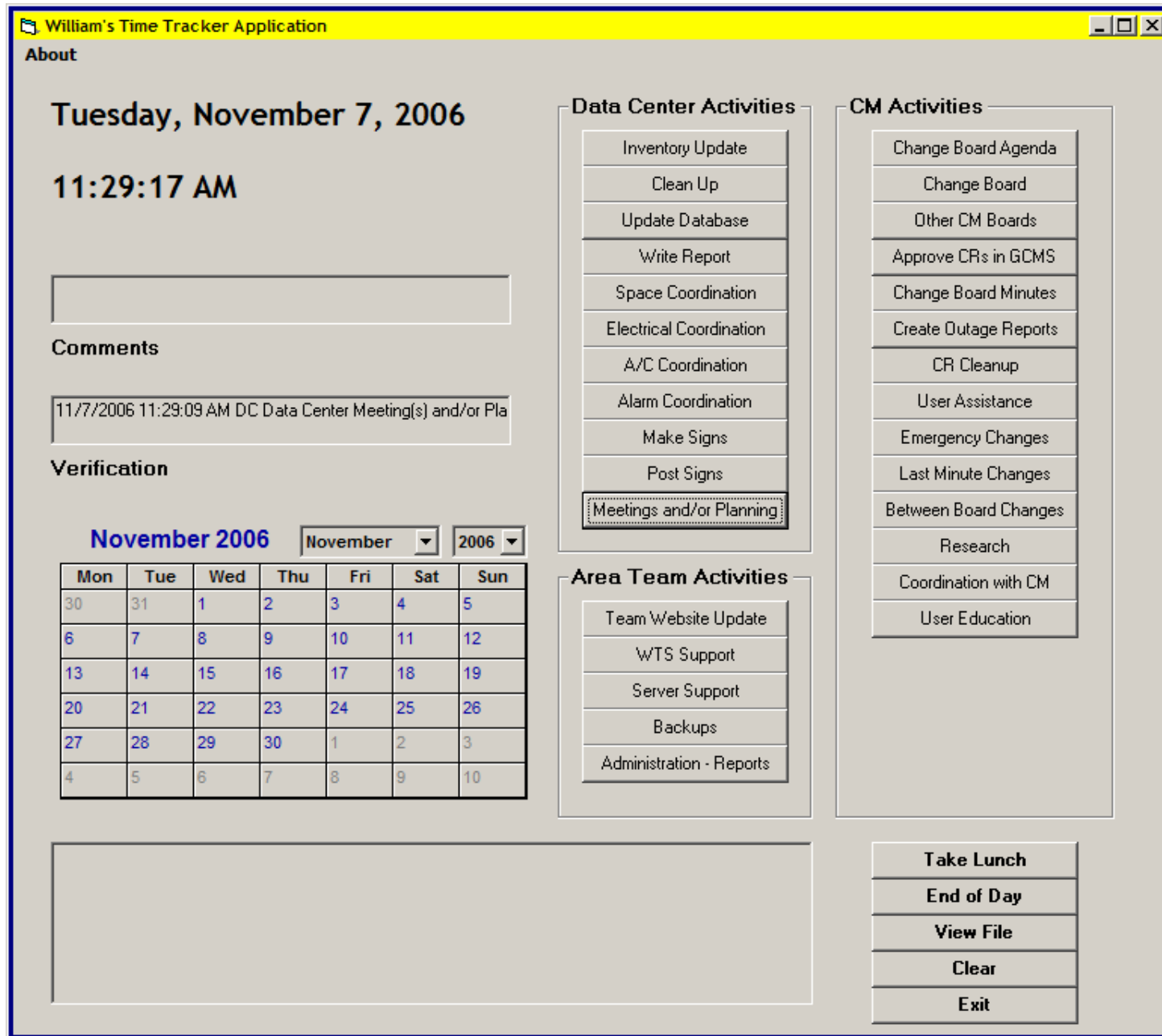
Time Tracker Application Designed and Written in Visual Basic
By William F. Slater, III in July 2002

Time Tracker Application Designed and Written in Visual Basic
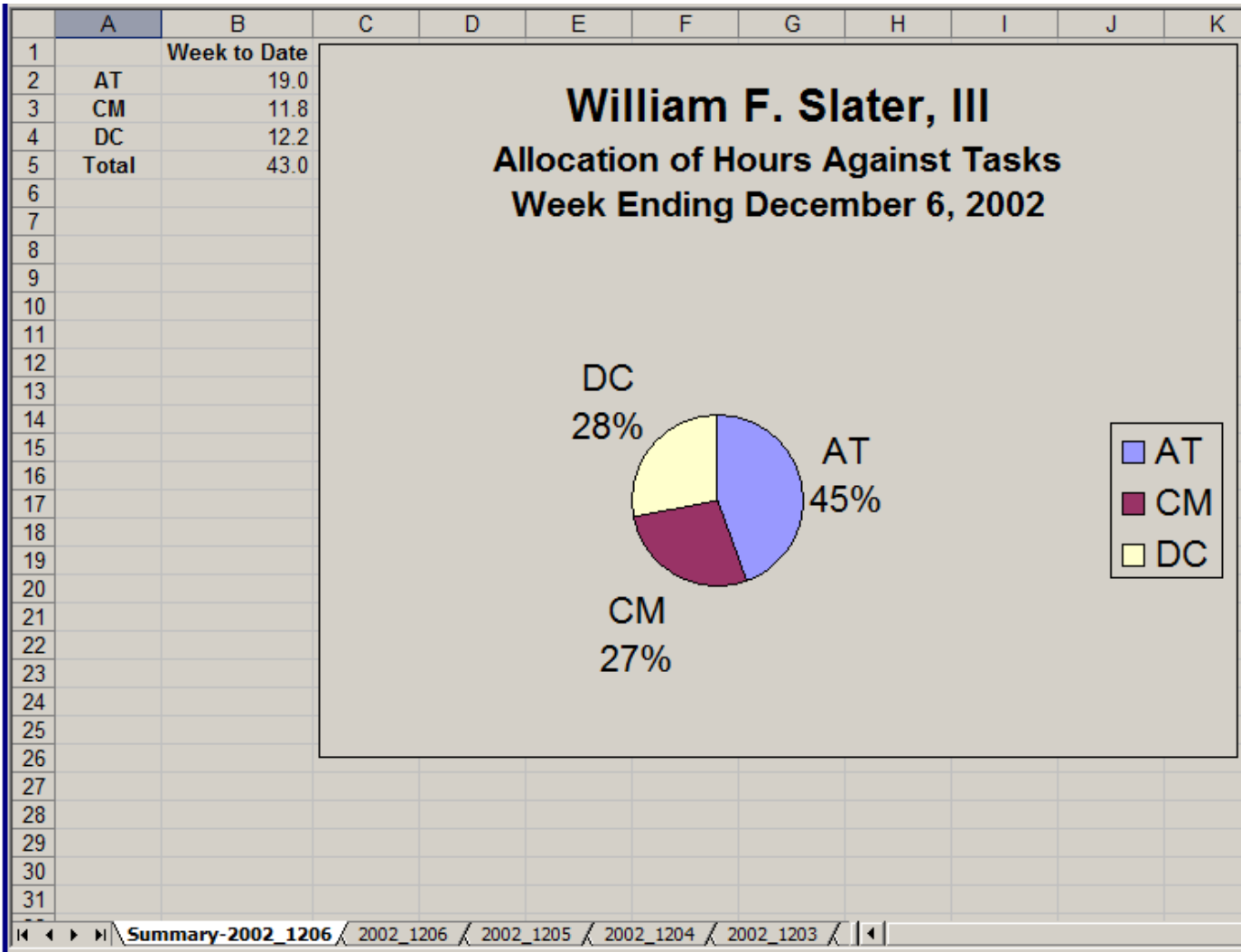By William F. Slater, III in July 2002

	A	B	C	D	E	F
1		Today	Week to Date	Percent of Daily Total	Running Pct	
2	AT	5.2	7.7	61.8	45.3	
3	CM	1.9	4.5	22.3	26.8	
4	DC	1.3	4.7	15.9	28.0	
5	Total	8.5	16.9	100.0	100.0	
6						
7				Actual Sequence		
8		12/3/2002 8:58	AT	Server Support and/or Builds	....	6
9		12/3/2002 9:04	DC	Data Center Meeting(s) and/or Planning	....	17
10		12/3/2002 9:21	CM	Prepare Emergency Change Request	....	10
11		12/3/2002 9:30	AT	Server Support and/or Builds	....	70
12		12/3/2002 10:40	CM	Prepare Emergency Change Request	....	6
13		12/3/2002 10:46	AT	Server Support and/or Builds	....	76
14		12/3/2002 12:02	CM	Prepare Emergency Change Request	....	6
15		12/3/2002 12:07	AT	Server Support and/or Builds	....	19
16		12/3/2002 12:27	Lunch	Lunch Marker	....	31
17		12/3/2002 12:58	CM	Other Change Boards	....	26
18		12/3/2002 13:24	AT	Server Support and/or Builds	....	6
19		12/3/2002 13:29	AT	WTS Support	....	2
20		12/3/2002 13:31	AT	Server Support and/or Builds	....	6
21		12/3/2002 13:37	DC	Data Center Meeting(s) and/or Planning	....	32
22		12/3/2002 14:10	AT	WTS Support	....	10
23		12/3/2002 14:19	AT	Server Support and/or Builds	....	0
24		12/3/2002 14:19	DC	Data Center Meeting(s) and/or Planning	....	5
25		12/3/2002 14:24	AT	Server Support and/or Builds	....	1
26		12/3/2002 14:26	DC	Data Center Meeting(s) and/or Planning	....	14
27		12/3/2002 14:40	CM	Coordination with Other Change Managemen	....	10
28		12/3/2002 14:50	AT	Server Support and/or Builds	....	15
29		12/3/2002 15:05	DC	Data Center Meeting(s) and/or Planning	....	1
30		12/3/2002 15:06	CM	Prepare Between Board Change Request	....	29
31		12/3/2002 15:35	AT	Server Support and/or Builds	....	0
32		12/3/2002 15:35	AT	WTS Support	....	4
33		12/3/2002 15:40	DC	Data Center Meeting(s) and/or Planning	....	5
34		12/3/2002 15:45	AT	WTS Support	....	35
35		12/3/2002 16:20	DC	Data Center Meeting(s) and/or Planning	....	6
36		12/3/2002 16:26	AT	WTS Support	....	45
37		12/3/2002 17:11	CM	Prepare and/or deliver CM Education	....	26
38		12/3/2002 17:37	AT	WTS Support	....	20
39		12/3/2002 17:58	EOD	End of Day Marker	....	
40						
41						
42				Sorted		Totals
43		AT		6		
44		AT		70		
45		AT		76		
46		AT		19		
47		AT		6		
48		AT		2		
49		AT		6		
50		AT		10		
51		AT		0		
52		AT		1		
53		AT		15		
54		AT		0		
55		AT		4		
56		AT		35		
57		AT		45		
58		AT		20		315
59		CM		10		
60		CM		6		
61		CM		6		
62		CM		26		
63		CM		10		
64		CM		29		
65		CM		26		113
66		DC		17		
67		DC		32		
68		DC		5		
69		DC		14		
70		DC		1		
71		DC		5		
72		DC		6		81
73		Lunch		31		
74						
75		Total Minutes			509	
76		Total Hours			8.5	
77						

Summary-2002_1206 / 2002_1206 / 2002_1205 / 2002

Daily summary

Actual Activities in the Sequence that they occurred. with time Durations calculated by Excel

Sorted Activities With Time Durations

Using the Time Tracker
Application Output with
Excel for a Daily Summary
Report. The Application was
designed and written in
Visual Basic
By William F. Slater, III
in July 2002

	A	B
1		Week to Date
2	AT	19.0
3	CM	11.8
4	DC	12.2
5	Total	43.0

William F. Slater, III

Allocation of Hours Against Tasks

Week Ending December 6, 2002

DC
28%

AT
45%

CM
27%

- AT
- CM
- DC

Summary-2002_1206 / 2002_1206 / 2002_1205 / 2002_1204 / 2002_1203 /

Using the Time Tracker Application Output with Excel for a Weekly Summary Report. The Application was designed and written in Visual Basic By William F. Slater, III in July 2002

Other

- Interests and Hobbies
  - Music
  - Reading and Writing
  - Judo
  - Chess
  - Staying up on Technology
  - Microsoft Technologies
  - Working on my Home Network
  - Linux
  - Programming
  - Teaching
  - Mentoring
  - Travel, especially visiting Poland annually at Christmas
  - Cruise vacations
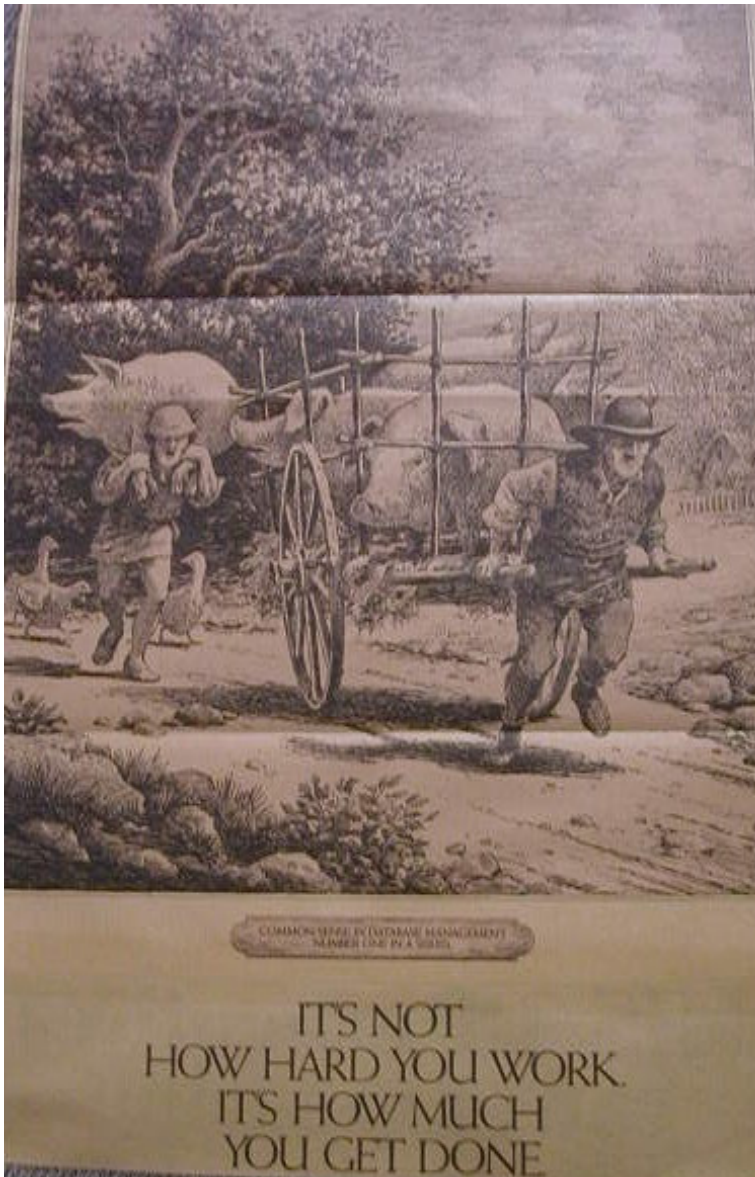 - Politics – National and Local

William Slater and Joanna Roguska
Warsaw, Poland - 2004

William Slater and Joanna Roguska
Off the Coast of Alaska, 2003

Work Philosophy

(from a Revelation Database Advertisement
Published in ComputerWorld in 1985)

It's not how hard you work…
It's how much you get done.

What Is the IDCP Data Center Technology Program?

The Institute for Data Center Professionals (www.IDCP.org)

MISSION

The Institute for Data Center Professionals (IDCP) is an independent vendor-neutral certifying body (www.idcp.org). Its mission is to support the professionals responsible for and working in data centers by providing information, access to education and training, certification, and other services in the areas of:

- Systems and software
- Networking
- Facilities management
- Operations and process management
- Product development and financial planning
- Security

Relevant core organizational and leadership skills are emphasized.

The Institute for Data Center Professionals (www.IDCP.org)

CERTIFICATION

The Institute for Data Center Professionals (IDCP) is responsible for testing and certifying data center professionals as qualified to be addressed as a Certified Data Center Professional (CDCP).

> The **Certified Data Center Professional (CDCP) certification** is for administrators and those making inroads into the data center profession who need broader technical skills in systems and software, networking, facilities management, operations and process management, product development and financial planning, security, as well as enhanced interpersonal, organizational and communications skills.

TESTING

Practical hands-on training and tests are offered at AFCOM conferences and regional meetings.

Courses toward IDCP Certified Data Center Professional Certification (CDCP)

Systems & Software	Security
•Information Technology & Systems Concepts	•Information Technology & Systems Concepts
•Introduction to Programming	•Systems Administration & Management
•Architecture of Hardware & Software	•Internet Security
Networking	**Operations & Process Management**
•Information Technology & Systems Concepts	•Information Technology & Systems Concepts
•Data Communications	•System Design & Analysis
•Internetworking	•Managing IT Organizations
	•Project Management
Facilities Management	**Product Development & Financial Planning**
•Information Technology & Systems Concepts	•Information Technology & Systems Concepts
•Introduction to Facilities	•Accounting for the Data Center
	•Project Management

Why Build These Large Data Centers?
Where the Future of Computing Is Going

Why Build These Large Data Centers?
Where the Future of Computing Is Going

- According to Nicholas Carr, author of ***The Big Switch***, published in January 2008, the IT Industry is now in a huge paradigm shift where companies will move from expensive IT professional staffs and infrastructures, to smaller IT staffs and getting their services across the Internet from large providers like Google, Microsoft, etc. This is called "cloud computing."

- These services will be provided on servers that are accessible via the Internet and web technologies.

Nicholas Carr

Why Build These Large Data Centers?
Where the Future of Computing Is Going

- According to Bill Gates and Ray Ozzie, in separate memos published on October 30, 2005: Microsoft will do a better job of embracing the web and web services. "People don't care how this stuff works, they just want it to work."

- These services will be provided on servers that are accessible via the Internet and web technologies.

Bill Gates

Ray Ozzie

"Cloud Computing"
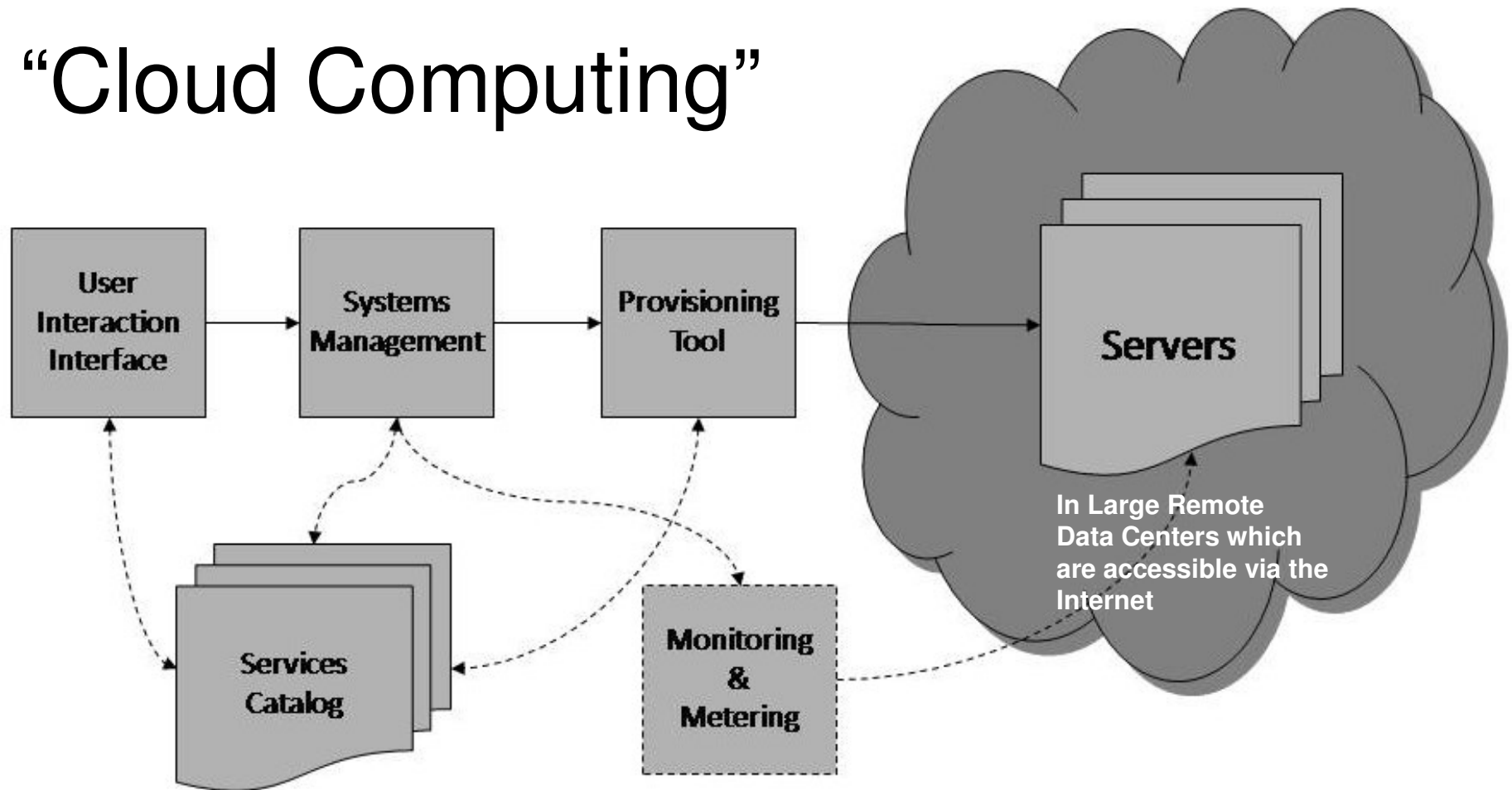
- User interaction interface: This is how users of the cloud interface with the cloud to request services.
- Services catalog: This is the list of services that a user can request.
- System management: This is the piece which manages the computer resources available.
- Provisioning tool: This tool carves out the systems from the cloud to deliver on the requested service. It may also deploy the required images.
- Monitoring and metering: This optional piece tracks the usage of the cloud so the resources used can be attributed to a certain user.
- Servers: The servers are managed by the system management tool. They can be either virtual or real.

Source: Wikipedia Article on Cloud Computing, retrieved on February 5, 2008

Microsoft Chicagoland Data Center
The Operational Description

- **Location:** Northlake, IL
- **Facility Cost:** $500 M
- **Building:** 550,000 sq. ft, two stories (approximately 275,000 sq ft. each), new construction
- **Power:** 40 MW supplied by ComEd
- **Cooling:** Free cooling
- **Capacity:** 1KW/sq ft, "10s of thousands of servers"
- **ASHRAE Rating:** Tier 4
- **Target Opening Date:** April 1, 2008
- **Expected Useful Life:** 10 – 15 years
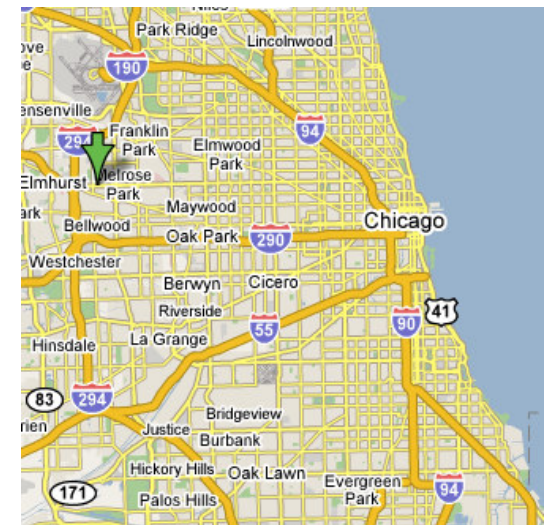
Northlake, IL

Microsoft's Cloud Computing Plans
(based on media coverage)
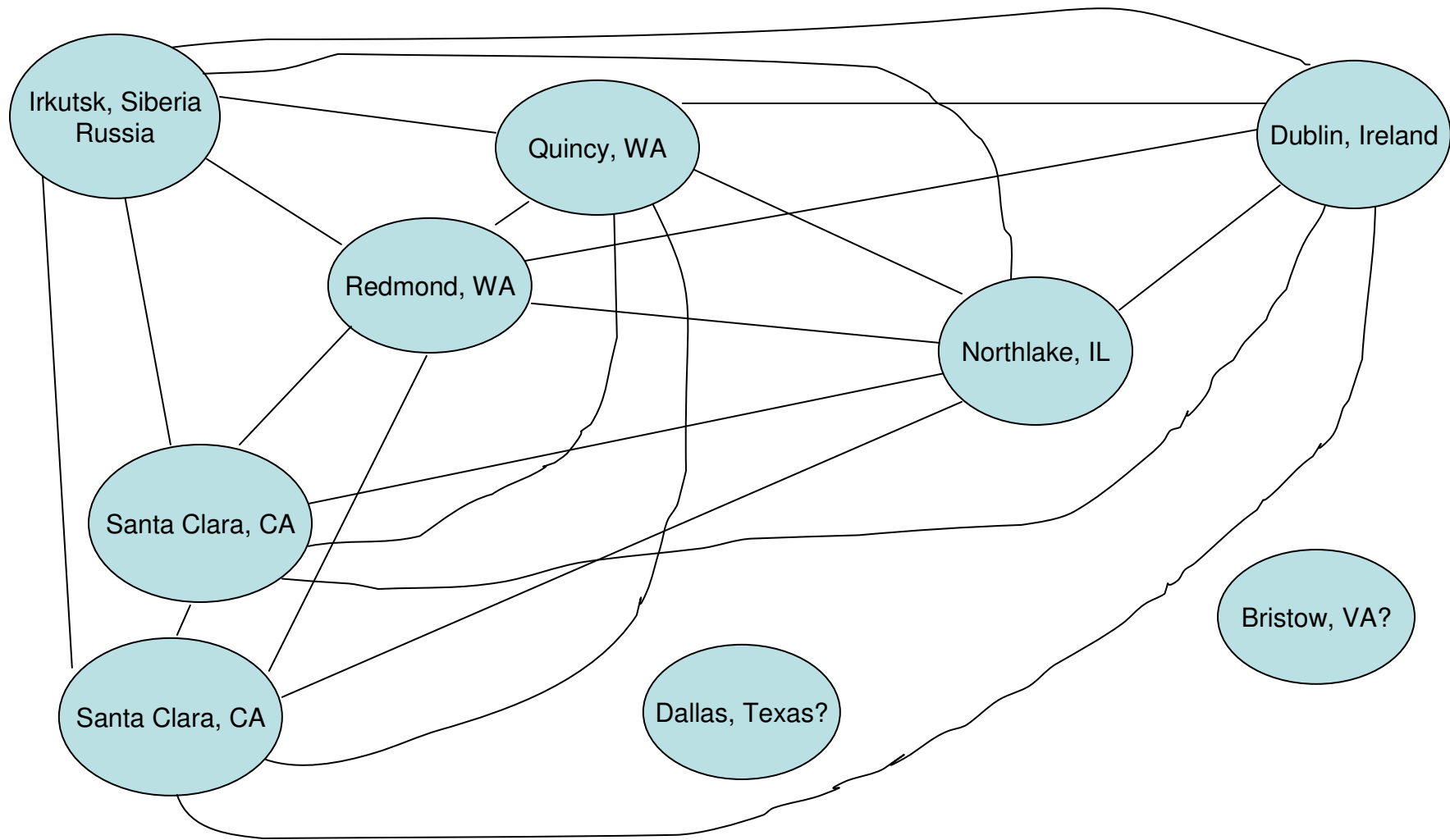
Managing the Microsoft Chicagoland Data Center

- The Team
- The Needs
- The Plan
- Reporting

The site of Microsoft's data center project in Northlake, Ill.

The Team

Jim Freely
Director,
NA
Data Center Operations

Data Center Manager
Microsoft Chicagoland
Data Center

Facilities Manager
Microsoft Chicagoland
Data Center

Security Manager
Microsoft Chicagoland
Data Center

IT Projects Manager
Microsoft Chicagoland
Data Center
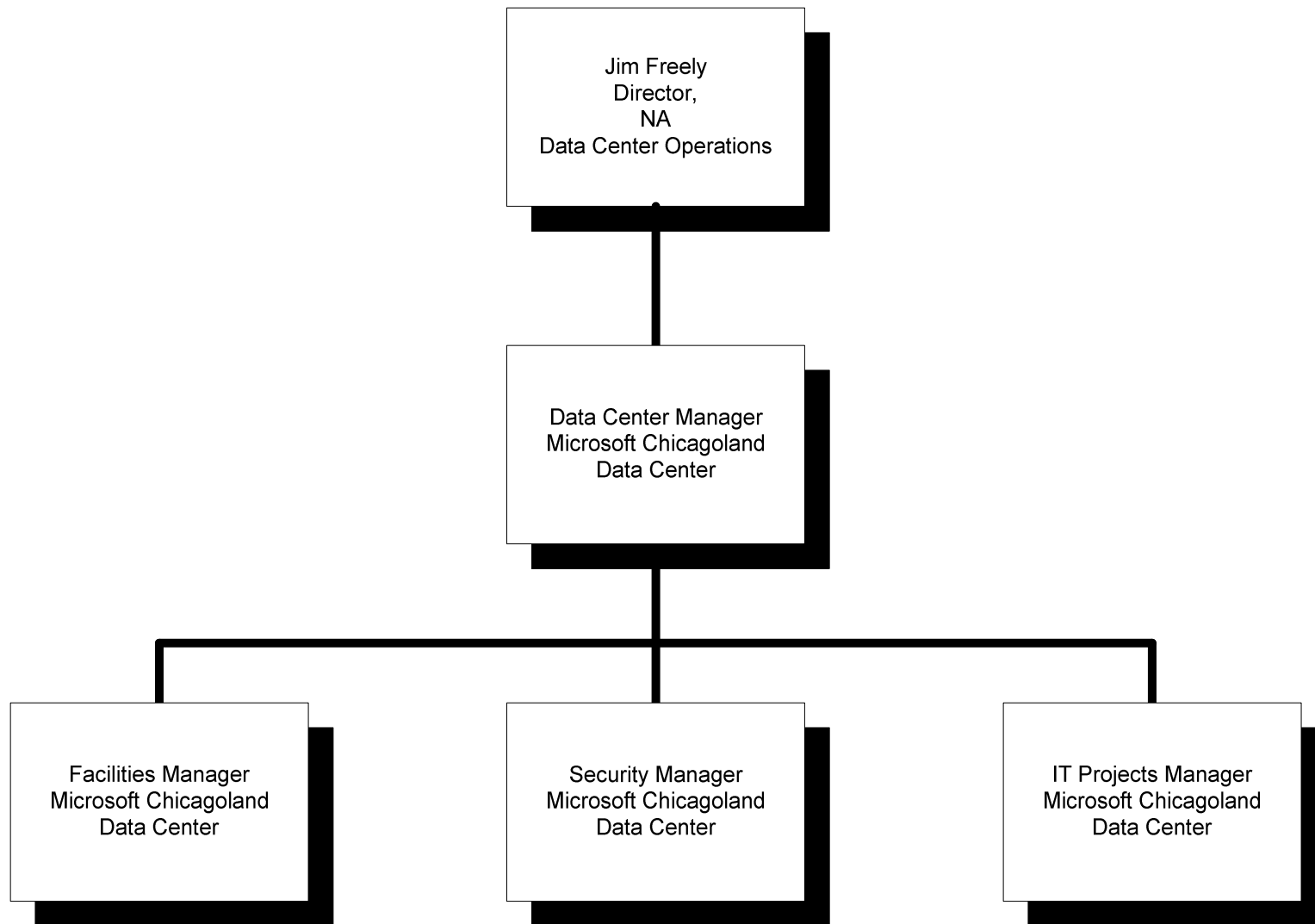
The Needs

- A strong team of experienced Data Center professionals
- 99.9999% uptime
- 24 x 7 x 365 days a year
- Ultra-high reliability
- Agile and able to quickly respond to Microsoft's business needs
- Capacity to accommodate, newer, increasingly powerful servers – for the next 10 to 15 years
- Concurrent maintainability
- High-security
- Safety in all activities

Availability

Availability Calculations

| Holy Grail		Uptime In One Year	Days	Hours	Minutes	Seconds	Downtime Days	Hours	Minutes	Seconds	
		100.000000000	365.000000000	8760	525600	31536000	0	0	0	0	
		Percent of Uptime									
3.6 days	2 - 9s	99.000000000	361.350000000	8672.40	520344.00	31220640.00	3.650000000	87.600000	5256.000000000	315360.0	2 - 9s
8.7 hours	3 - 9s	99.900000000	364.635000000	8751.24	525074.40	31504464.00	0.365000000	8.760000	525.600000000	31536.0	3 - 9s
52 minutes	4 - 9s	99.990000000	364.963500000	8759.12	525547.44	31532846.40	0.036500000	0.876000	52.560000000	3153.6	4 - 9s
5.2 minutes	5 - 9s	99.999000000	364.996350000	8759.91	525594.74	31535684.64	0.003650000	0.087600	5.256000000	315.4	5 - 9s
31.5 seconds	6 - 9s	99.999900000	364.999635000	8759.99	525599.47	31535968.46	0.000365000	0.008760	0.525600000	31.5	6 - 9s
3.2 seconds	7 - 9s	99.999990000	364.999963500	8760.00	525599.95	31535996.85	0.000036500	0.000876	0.052560000	3.2	7 - 9s
.3 seconds	8 - 9s	99.999999000	364.999996350	8760.00	525599.99	31535999.68	0.000003650	0.000088	0.005256000	0.3	8 - 9s

The Plan

- Manage this operation as an ongoing Program, consisting of several, interrelated projects
- Use either Microsoft Operations Framework 3.0 or ITIL v3 a services management framework model
- Develop a Data Center Operations Guide – or use an existing one.
- Everything goes through Change Management
- Everything is recorded in a Configuration Management Database
- Create and Maintain a Facilities Management Database, including records for installation, operations, maintenance, and testing for all facilities equipment
- Create and Maintain a Security Management Database, including , records for all security operations and events
- Create and Maintain a Project Management Database, including, records for all projects
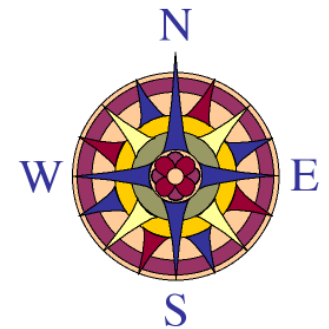
The Plan

- Documentation will be created, uploaded and maintained via a SharePoint Portal
- Safety management throughout with regular safety inspections
- Automation of early-warning systems in the environment – i.e. use NetBot technology by APC to monitor the temperature at least three places in each rack
- Routinely test the WAN PoPs.
- Regular testing of all facilities equipment
- Create budgets
- Track costs to budget
- Training for all employees
- Coordinate closely with other Microsoft Data Center Managers
- Regular reporting on everything listed above
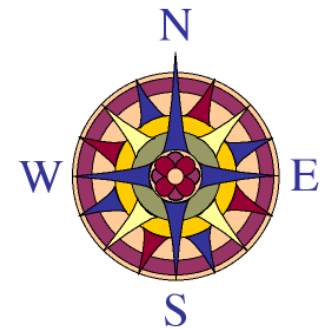
Reporting

- Reports will be created and distributed to both staff and management weekly, monthly, yearly, and on request.
  - Team Status / Personnel
  - Operational Status
  - Floor plans
  - Power and cooling data
  - Projects
  - IT Equipment Inventories and Status
  - Change Management
  - Configuration Management
  - Audits – Facilities, Equipment, Security and Safety Management
  - Incidents – Facilities, Security and Safety Management

Examples of Reporting

2004 Summary - BP Naperville Data Center Graph of Incoming and Outgoing Servers

Naperville Data Center -
Incoming vs. Outgoing Servers -
2004
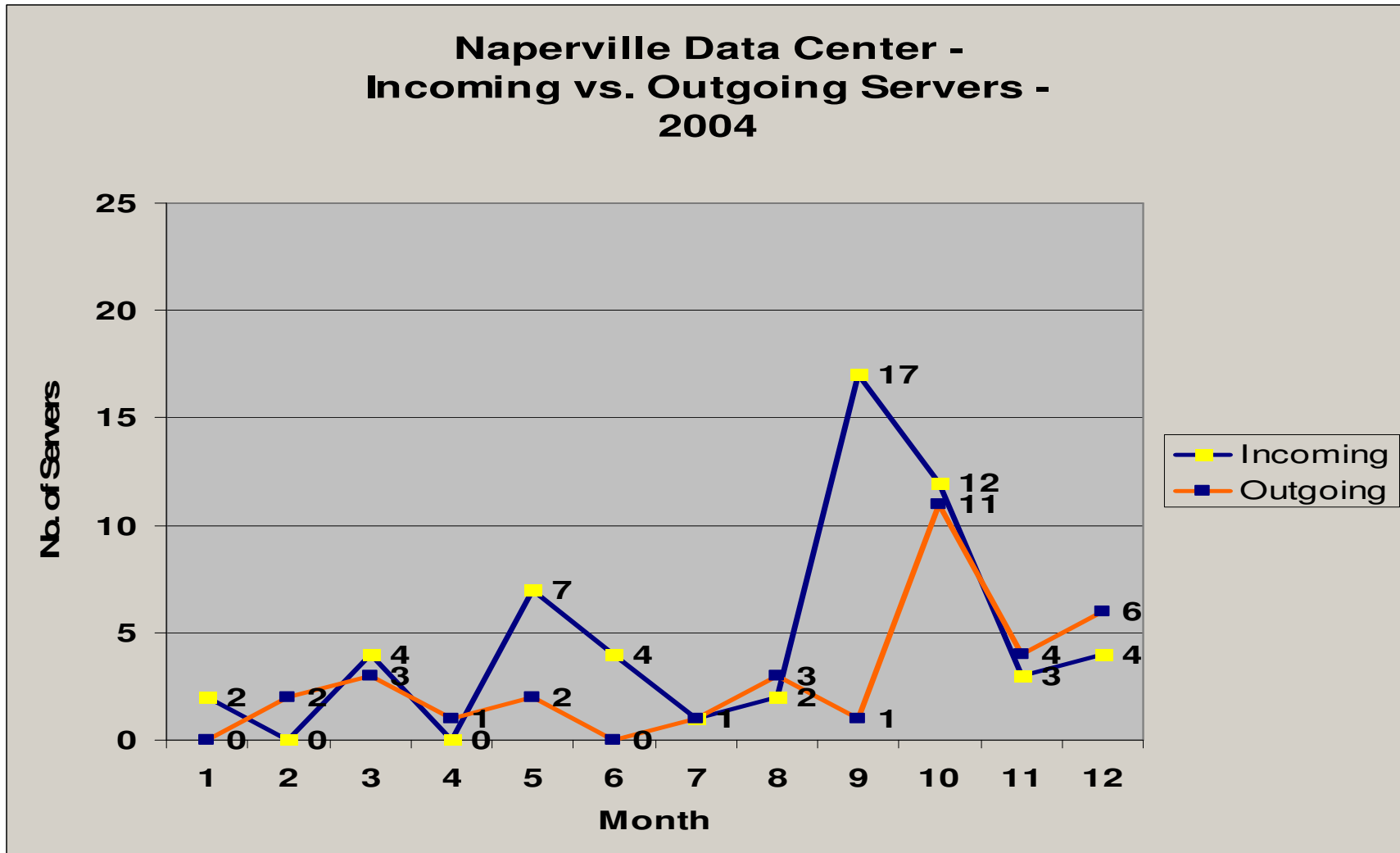
2004 Summary - BP Naperville Data Center Cumulative History

	Actual Count Incoming Servers	Percent Change from Previous Year	Actual Count Outgoing Servers	Percent Change from Previous Year
2004	56	80.6	34	100
2003	31	-13.9	17	-37.0
2002	36	140	27	N/A
2001	15	N/A	0	N/A
Totals	138		78	

```
┌─────────────────────┐          ┌──────────────────────────────────┐
│ DCT Services         │          │ List of Vendors and Organizations│
│ Management (BP)      │          │ that Support and Work with the   │
│ BP Naperville        │          │ Naperville Data Center           │
└─────────────────────┘          │                                  │
          │                      │ Last Updated on March 3, 2005    │
┌─────────────────────┐          │ William F. Slater, III (Getronics)│
│ William Slater (Getronics)│    └──────────────────────────────────┘
│ Data Center Manager │
└─────────────────────┘
```

BP - GPM&S	BT	Cable & Wireless	Help Desk	HP
IBM	Insignia Security	Iron Mountain	Getronics	J.C. Anderson
Leibert Global Services	Meade Electric	MCI	MIDCO	NEWCO
Robin Summerville (Contractor Warranty Administration)	SBC	Siemens	TargetVision	Trammel Crowe (March 2005)
Johnson Controls (Through 3/31/2005)	BP Site Managers	Chemicals Change Board (Through 3/31/2005)	Downstream - GBC Change Board	Valley Fire Protection
Telemeister	DVS	SAIC	LBR - Buidling Services	DataClean

Door to Hallway

Emergency
Shutdown
Button

Folding Table

Door to Hallway

Emergency
Shutdown
Button

**New Fire
Protection
System
Control
Panel**

01	02	03
Rack	Rack	Rack

COE Racks

Rack 0 C-Rack 20 C-Rack 21 C-Rack 22 C-Rack 23

Rack

Comms

C-Rack 02   C-Rack 01   C-Rack 00

Rack	Rack	Rack

(New TBOP Racks)

C-Rack 16   C-Rack 14

C-Rack 17   C-Rack 15

Rack	Rack	Rack	SMTP Server

Power
Circuit
Panel

Aspen
Retail
IVR

Chair

C-Rack 24

Monitor

AMNAPS408

COE DESK

Monitor

Monitor

Phone
Circuit
Panel

COE RACKS

C-Rack 18

BP1NAPLU001

Unix Servers

Unix Servers

Old VAX 4000 Eqip.

GBC Servers

GBC Servers

Laptop

04

05

06

07

Proxy

Chair   Chair

C-Rack 03   C-Rack 04   C-Rack 05   C-Rack 25   C-Rack 26

Door to PSO
Equipment
Room

Comms

C-Rack 13

C-Rack 06   C-Rack 07   C-Rack 09   C-Rack 11

C-Rack 10   C-Rack 12

08

09

10

COE Racks

VAX Servers

Unix Servers

Open Rack

APPS Rack

APPS Rack

APPS Rack

APPS Rack

Door to
Desktop
Services
Equipment
Room

C-Rack 29   C-Rack 27

C-Rack 28

11

12

13

14

15

Tape Vault Door

Rack

Rack

Rack

6 new
Windows
2000
Proxy
Servers

**New Fire
Protection
System
FM Gas
Canisters**

Tape Vault

16

Docum
entum

17

Castrol

18

Storage
Cabinet
Containing
VAX
Accessories

Leibert
Air Conditioning
Unit

User Dept.	Project:	
DCT Services Naperville	Data Center Manager	
Version:	Title:	
3.1	Data Center Floor Plan	
Drawn by:	Date:	
William F. Slater, III	February 24, 2004	

Data Center UPS

Current Servers	145					
	kVA	Percent				
Current Usage	64	35.6				
Available Capacity	116	64.4				
Maximum Capacity	180	100.0				

**Naperville Data Center -
Current Power vs. UPS Capacity -
October 2004**
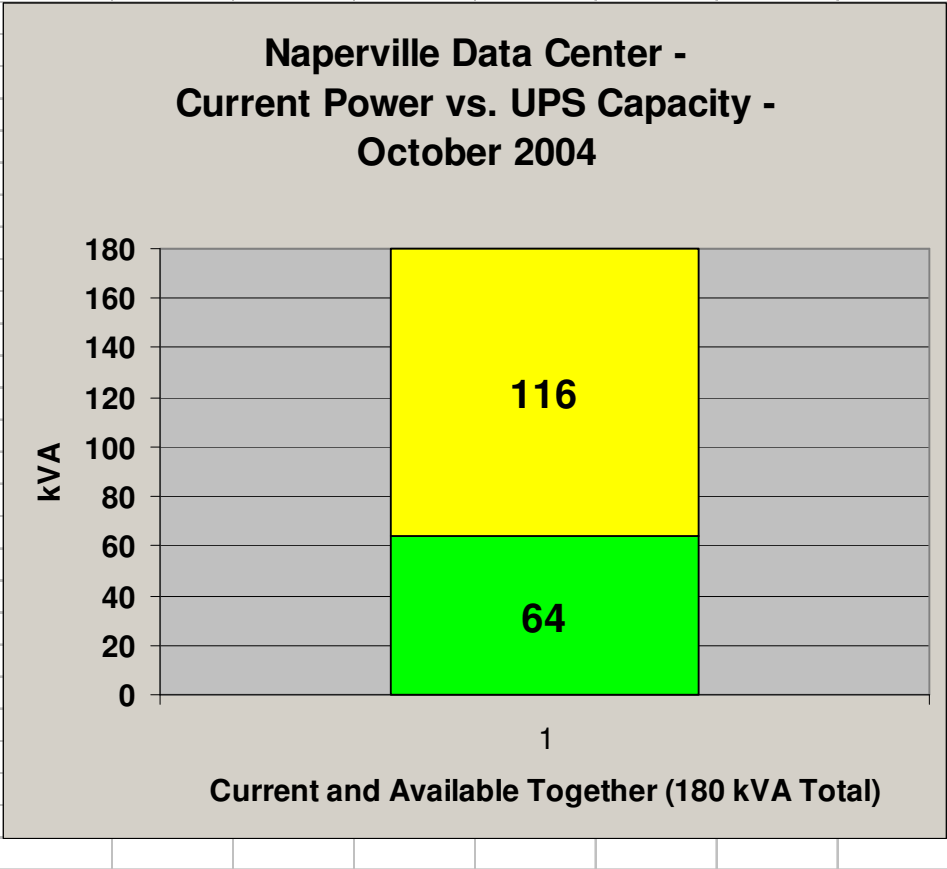
Data Center Backup Generator Power

		kVA	Percent			
Current Servers		145				
		kVA	Percent			
Current Power Usage		64	15.1			
Available Capacity		361	84.9			
Maximum Capacity		425	100.0			

**Naperville Data Center -
Current Power Usage vs.
Backup Power Generator Capacity -
October 2004**

kVA

501
401
301
201
101
1

361

64
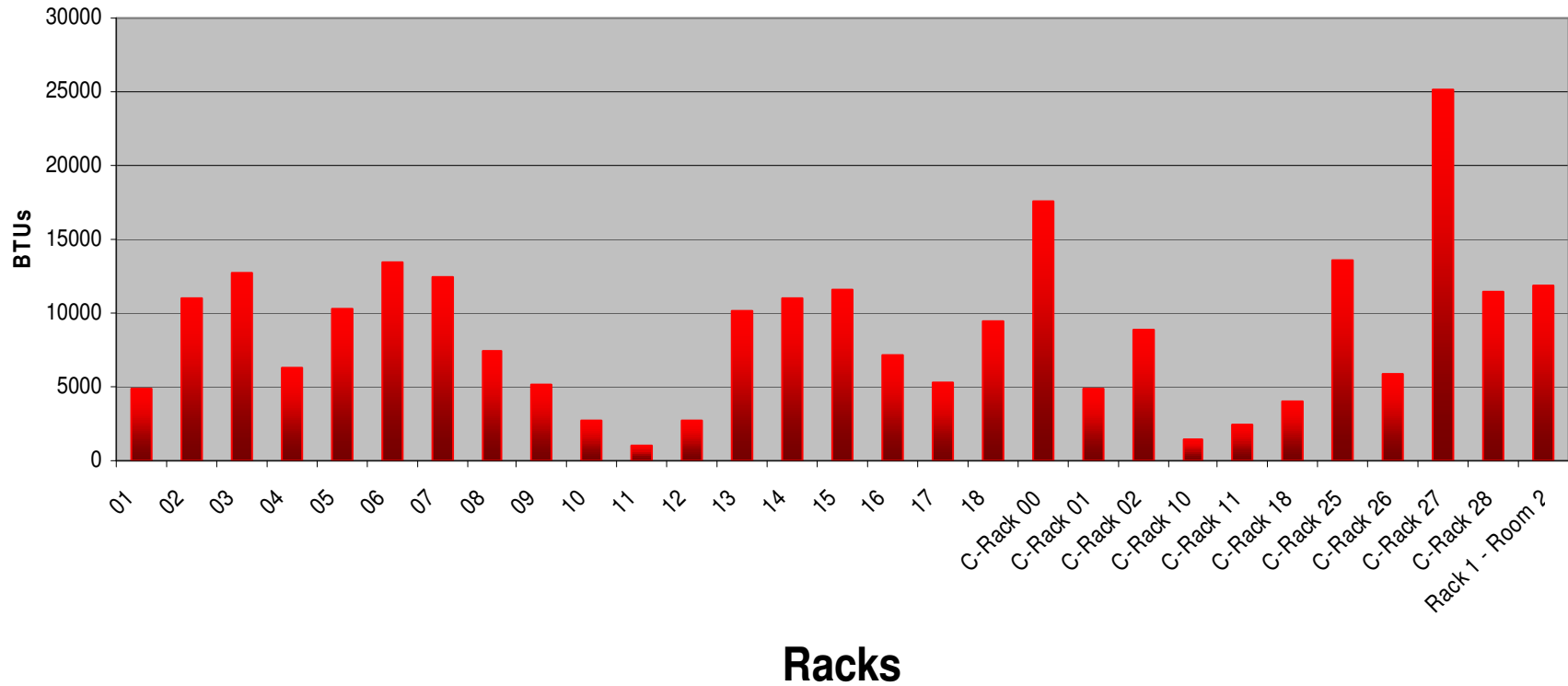
1

Current and Available Together (425 kVA Total)
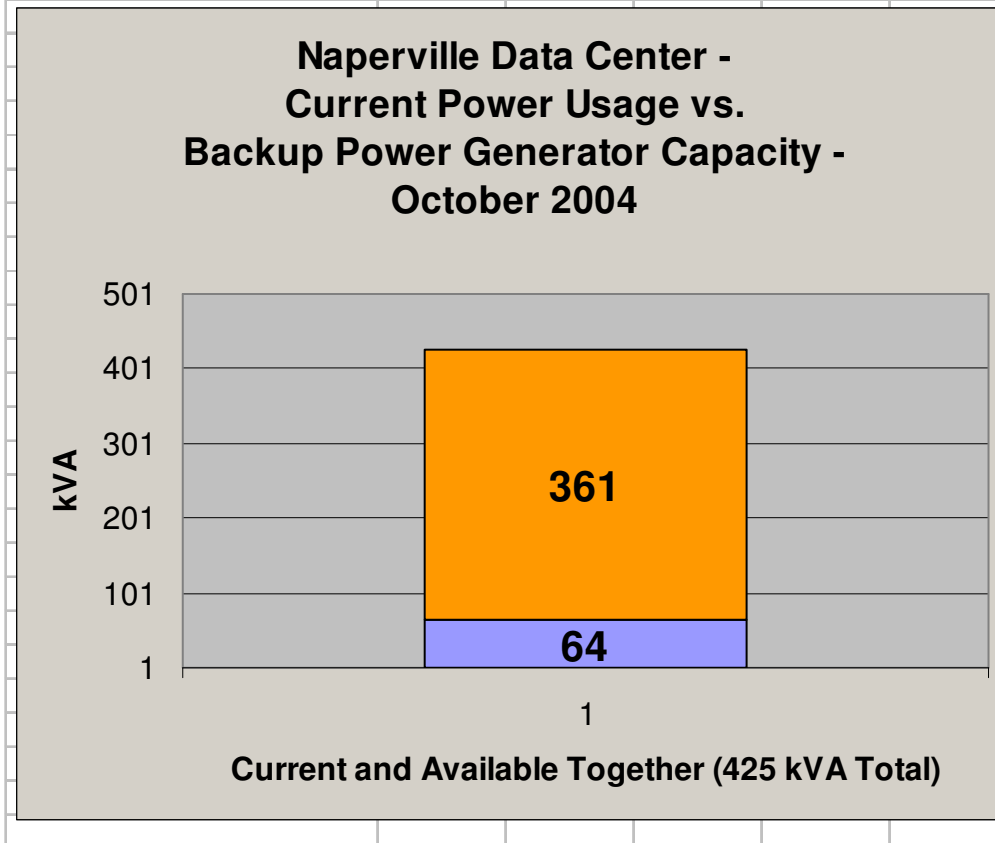
Watts by Rack
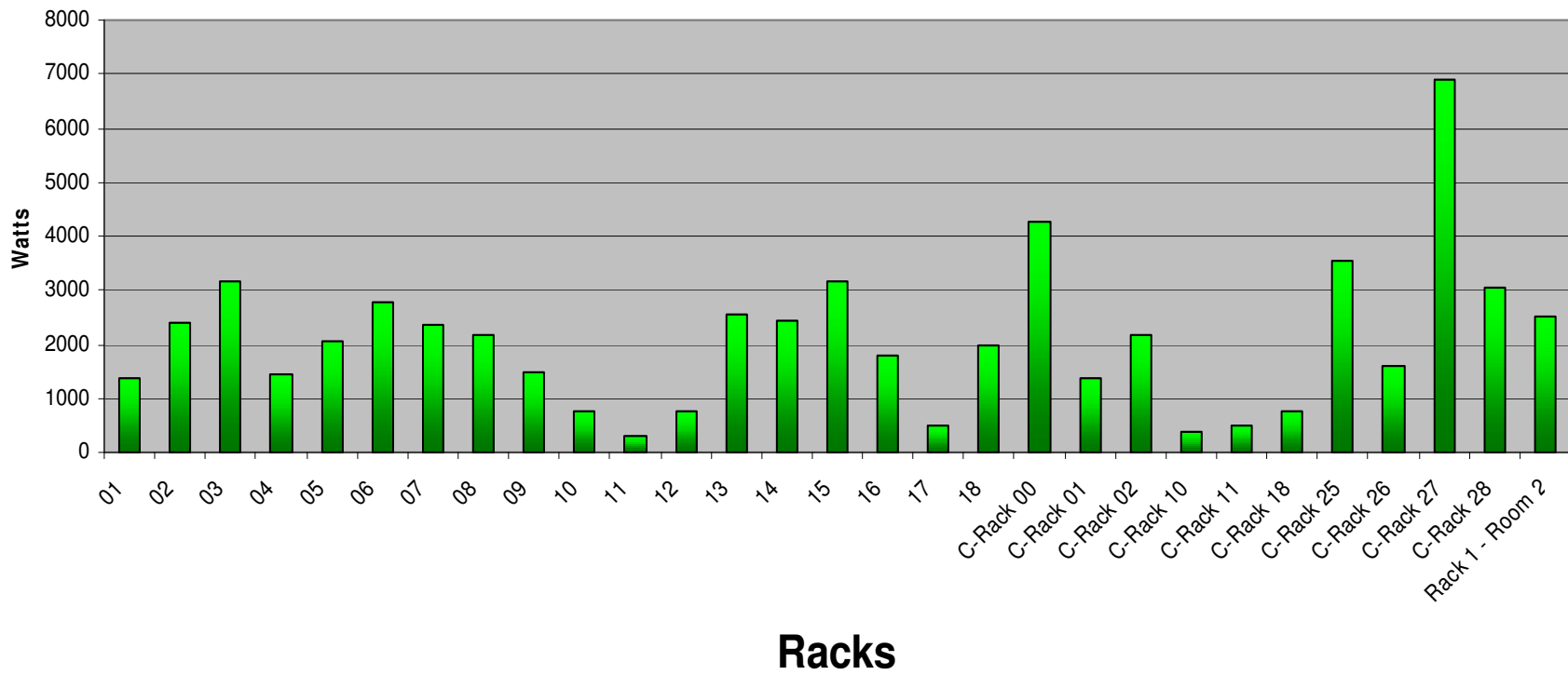
BTUs by Rack

BTUs

Data Center Safety

Data Center Safety Introduction

- Data Centers and Server Rooms often appear to be sterile, computer-filled environments that look boring and safe

- They represent many opportunities for accidents, if they are not approached with Safety in mind.

- Policies and Safety education are necessary to enforce safety.

The Dangers

- Raised Floors
- Lifting Hazards
- Electrical Shock Hazards
- Static Discharge Hazards
- Cutting Hazards
- Pinching / Amputation Hazards
- Fire Hazards
- Accidentally Triggering an FM 200 Fire Retardant System Dump
- Accidentally Unplugging Network Cables or Power From Servers

Conclusion

- Successfully managing a facility with the size and complexity of the Microsoft Chicagoland Data Center will require a great deal of Teamwork, coordination, experience, multi-disciplinary skills and professionalism.

- If selected for this job, with my previous experience and education in Data Center Management, I am confident that I could fill this Data Center Manager position for Microsoft.

- Passion, persistence, and professional excellence have helped sustain me and make me successful throughout my IT career. This is what I would bring to this position.

William F. Slater, III
Data Center Manager,
BP Naperville Data Center,
October 2002

A Favorite Quote

- "Thank you very much and I hope we passed the audition!"
  - John Lennon, 1970

John Lennon

Questions?

William F. Slater, III
Data Center Manager,
BP Naperville Data Center,
December 2005