

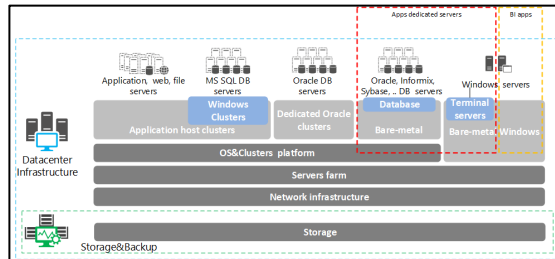
# **TECHWEB: A COMPREHENSIVE SYSTEM ADMINISTRATION TOOLSET**

Developed by  
Sergey A. Sinyagov  
Last update  
August 14, 2024

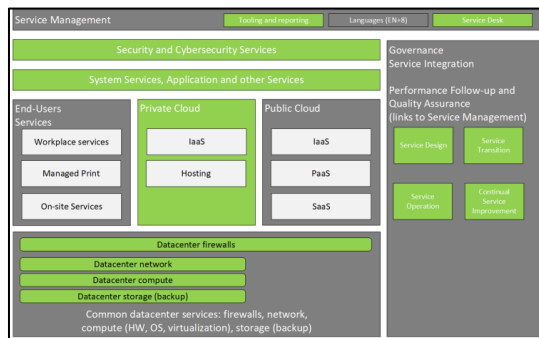
# TECHWEB OVERVIEW

- 1. Overview of TechWeb**
- 2. Key Features**
- 3. Supported Environments**
- 4. Integration and Accessibility**
- 5. Disaster Recovery and Mobile Solutions**
- 6. Compliance and Standards**
- 7. Support and Escalation Procedures**
- 8. Administrator Tools**
- 9. Advantages**
- 10. Summary and Questions**

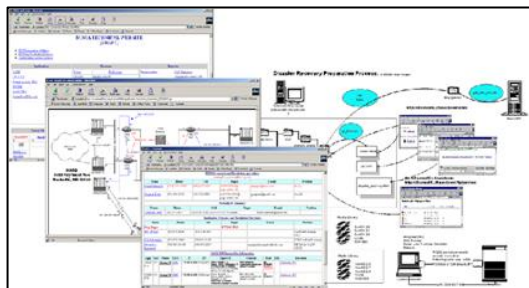
# INTRODUCTION TO TECHWEB



Datacenter architecture



Covered environment



Implemented functionality

When I was working as a Senior System Engineer/Architect, I developed a web-based/standalone system/application monitoring tool and knowledge base for on-call or field system engineers.

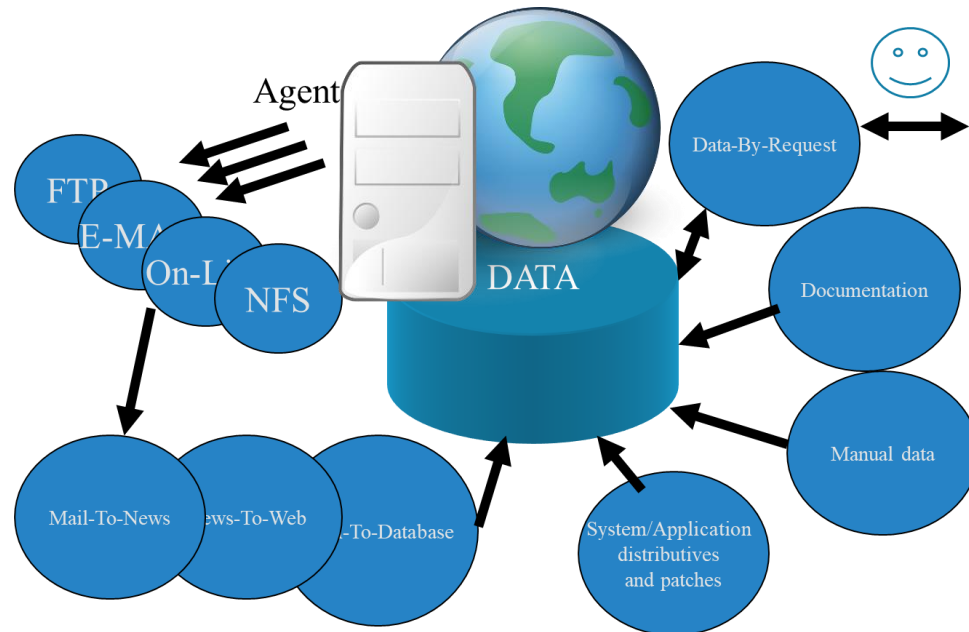
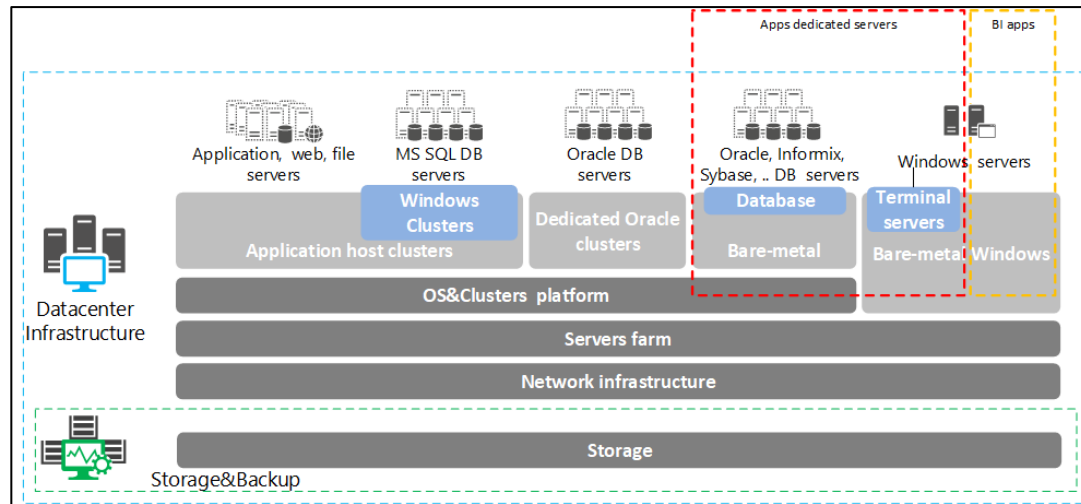
Developed on Apache Web Server, Linux, CGI, RPC, \*shell, C, Sun Solaris, HP-UX, Windows Server and applied for the Distributed Datacenters based clustered HA&DR infrastructure.

It has been used for Telecom, Stock exchange/financial, and GAS/Oil companies.

Now, it is partially ported to PHP just in case and for practice. Please see some descriptions of this tool (named TechWeb) and experience. Some architectural solutions were used, now grown to IaaS and IaaS concepts and as AWS SnowBall/AWS Snowball Edge solutions for the Cloud.

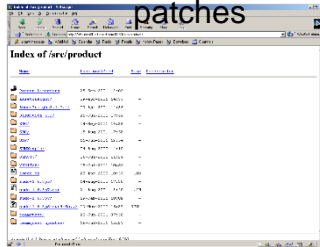
Enjoy it,  
Sergey Sinyagov

# SYSTEM INFORMATION SOURCE & INTEGRATION



# INFORMATIONAL CONTENT

Access to archives  
distributives



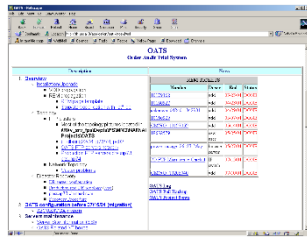
patches



News and Logs



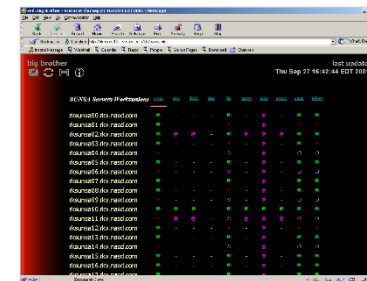
Administrative instruction



Database Search

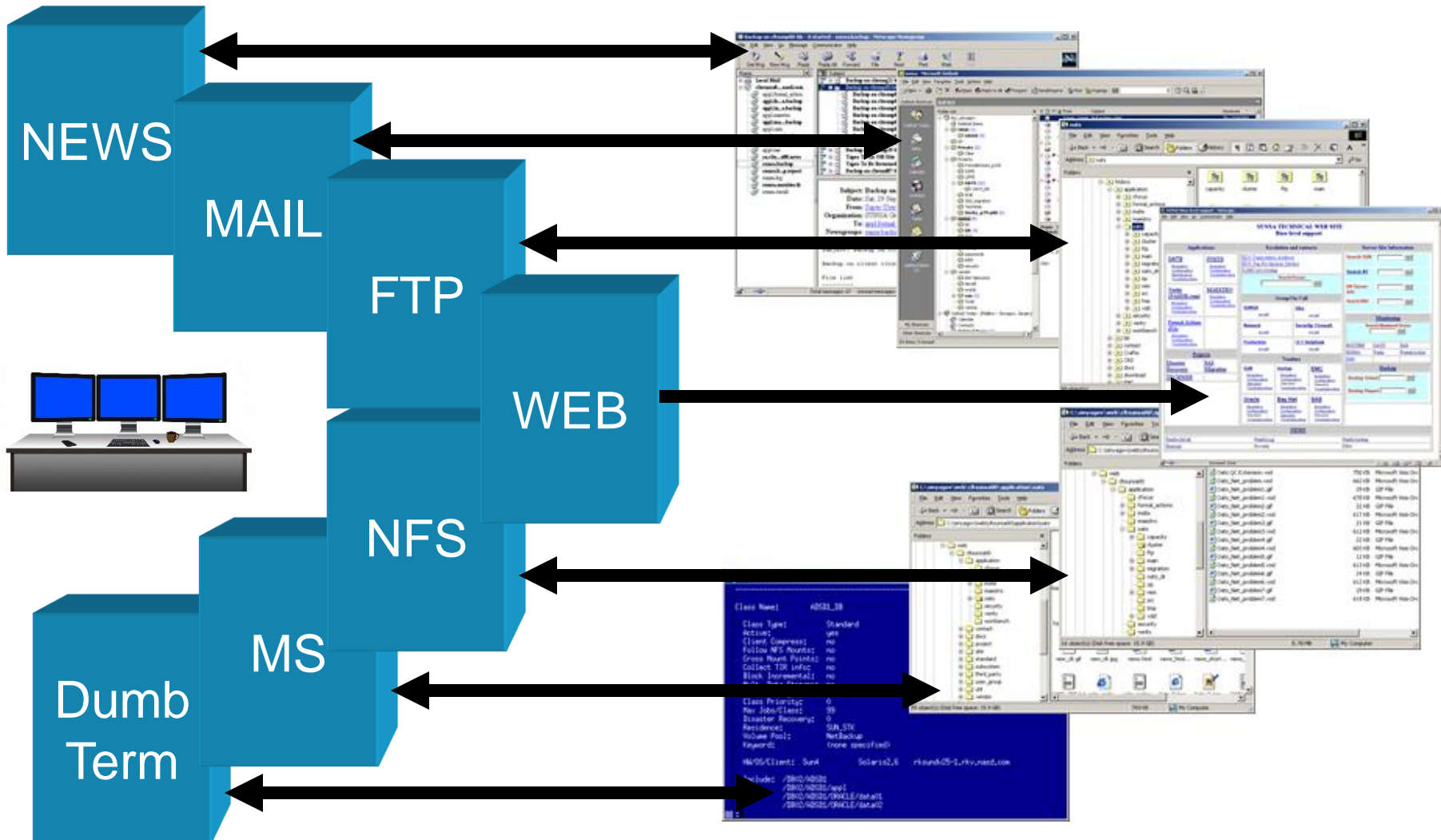


Production monitoring

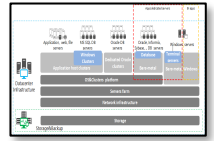


Administrative  
WEB Server

# VARIOUS DATA ACCESS



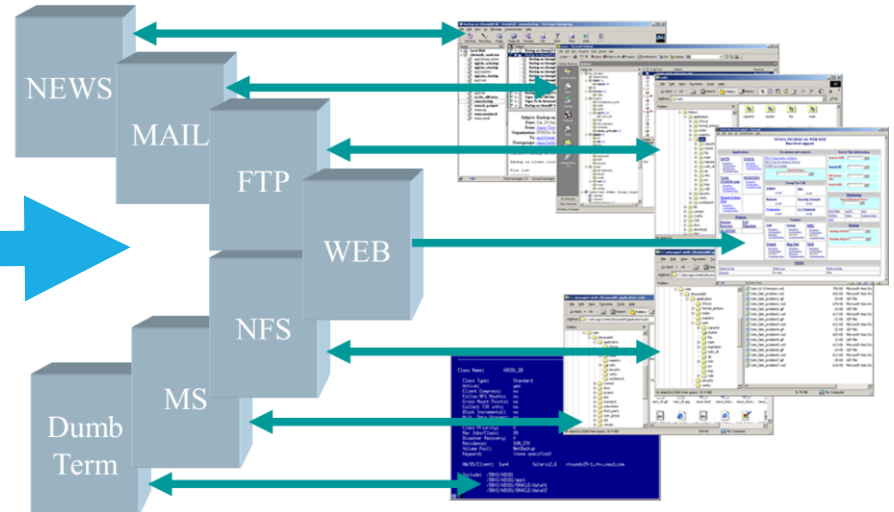
# VARIOUS ADMINISTRATIVE SERVER PLATFORMS



Administrative  
WEB Server

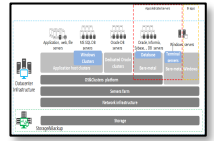


Network  
Connection





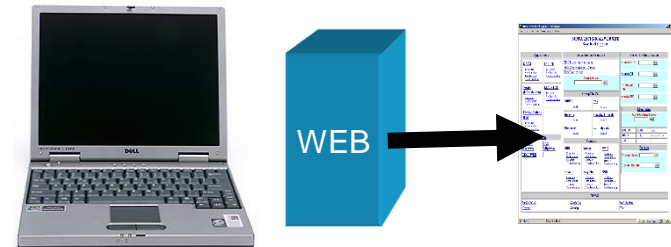
# MOBILE SYSTEM



## Flash/CD based information system

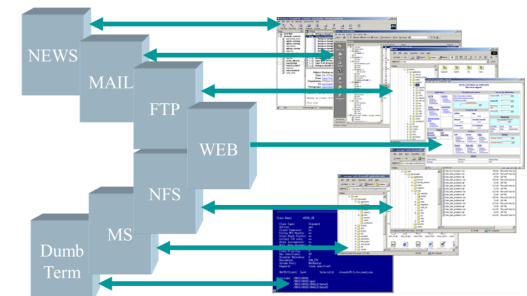
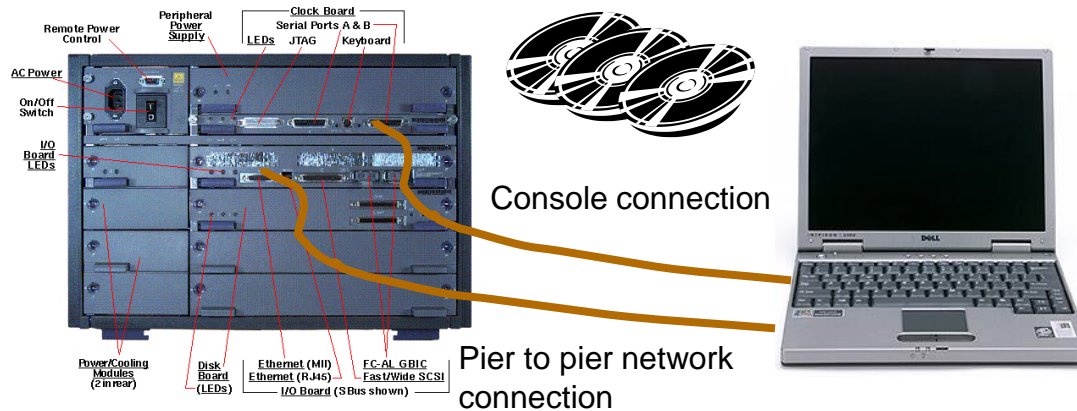


## On-call standalone station



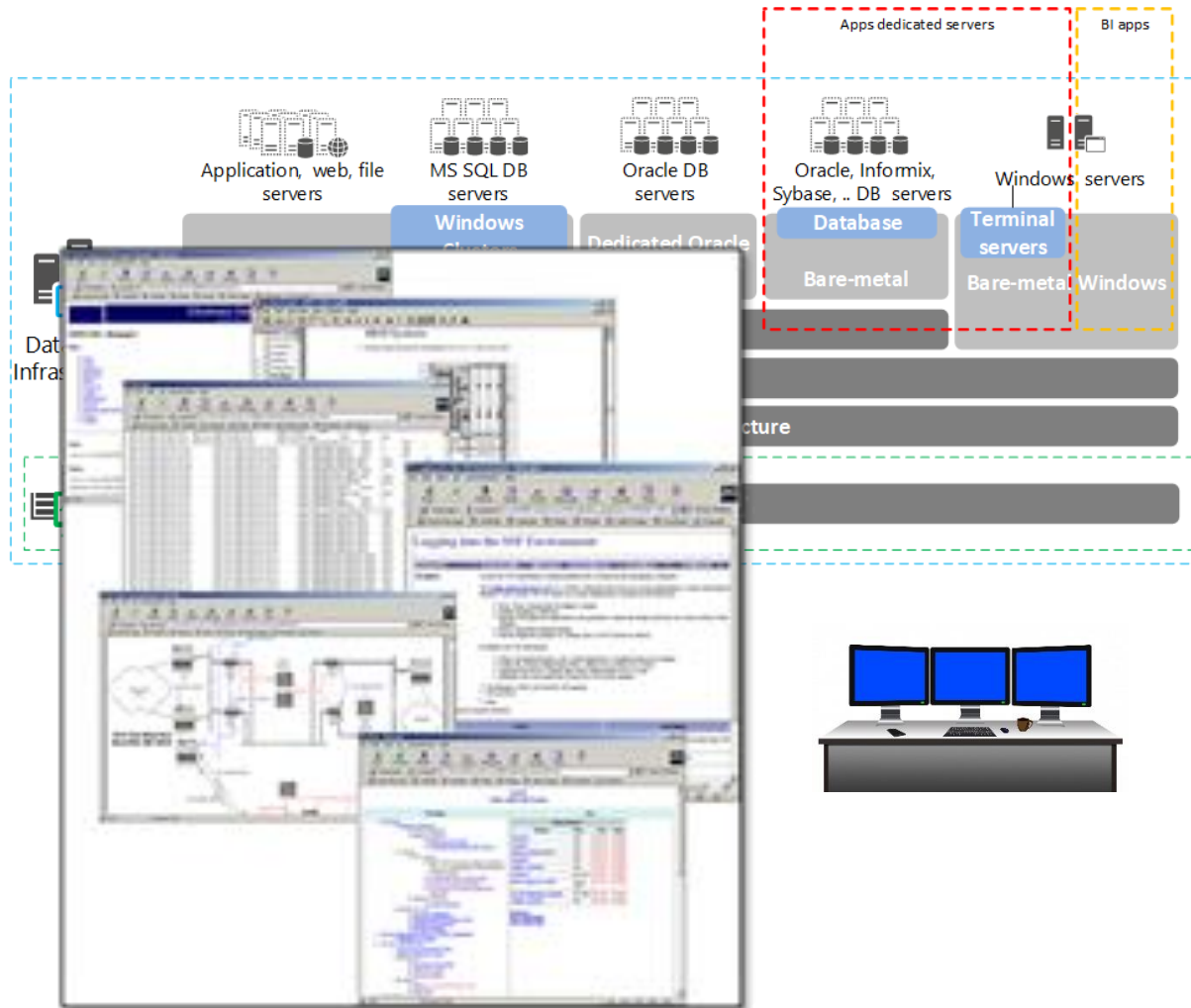
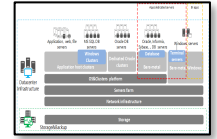
## Mobile recovery center

### CD/Flash Library





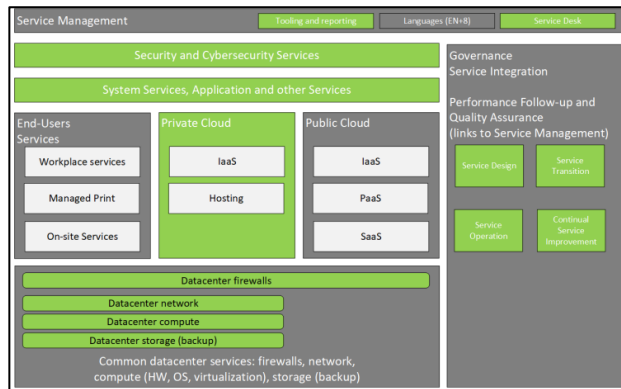
# SYSTEM CONFIGURATION DATABASE



## Configuration:

- Hardware
- Disks/Capacity
- OS
- Network
- Third party software
- Monitoring/report
- Applications

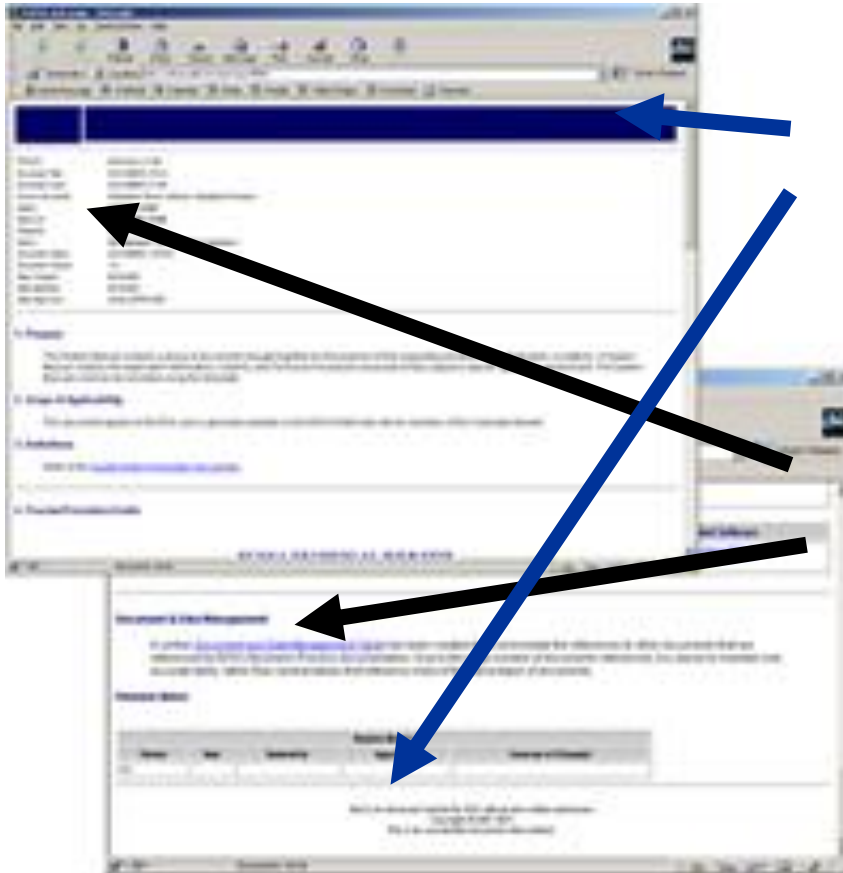
# CORPORATE STANDARDS



## Procedures:

- Vendor escalation
- System/Application Team escalation
- On-Call escalation/Functions
- Responsibility search
- Configuration search
- Procedure search
- Requirements

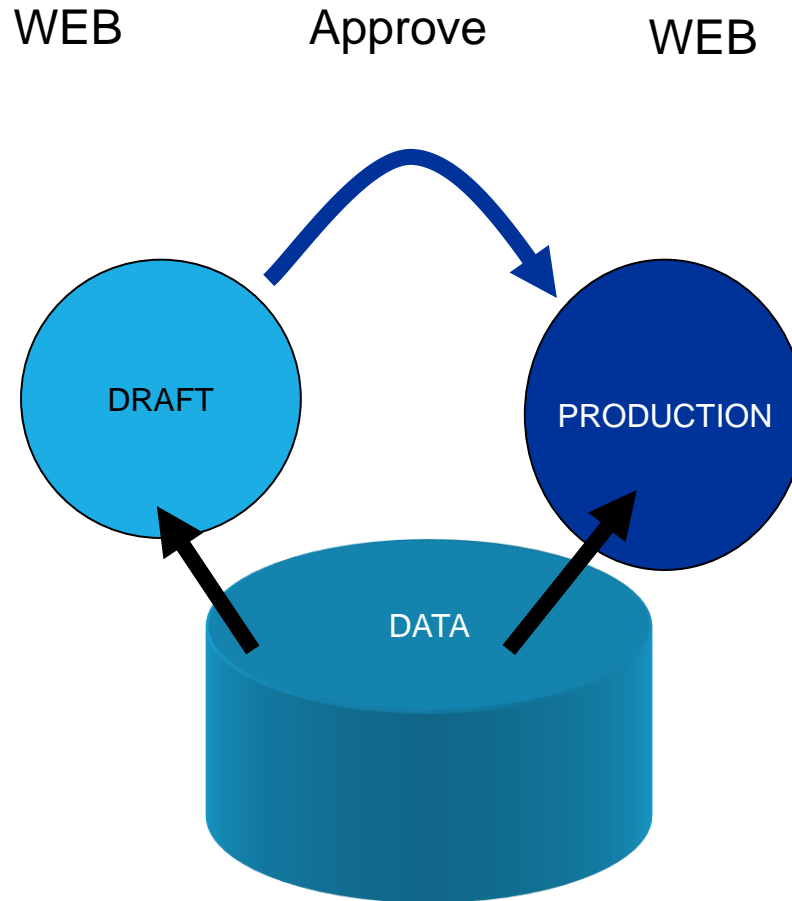
# ISO9000 DOCUMENT'S FORMAT



## Any document has:

- Corporate header
  - Corporate footer
  - They are implemented as “Include” and could be change in only one place.
- 
- ISO9000 header
  - ISO9000 footer
  - They are added directly to the new document and are the subject of changes in case of approving, document changes, etc.

# ISO9000 CHANGE CONTROL



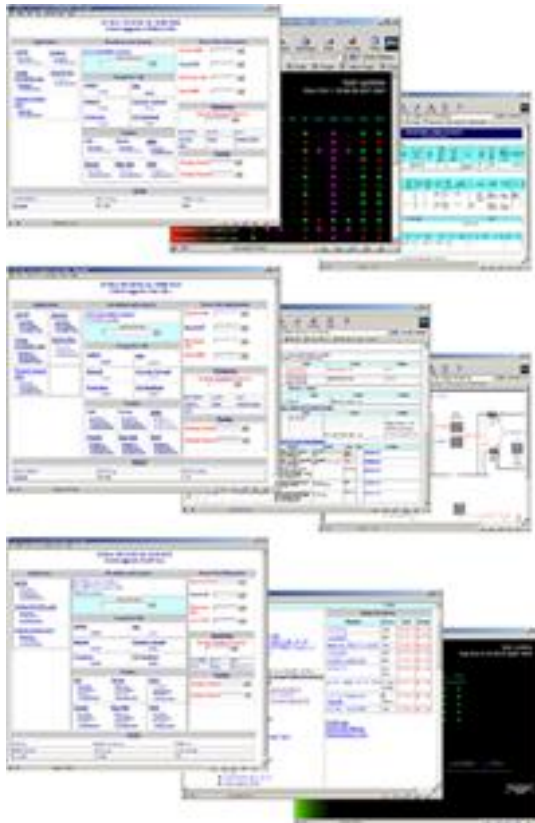
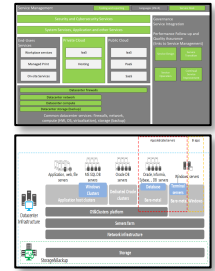
## Html documents

- Documentation sources
- Information needs to be approved

## Operative data

- Databases
- Reports
- Monitors

# THREE LEVEL SUPPORT



## Operator 24/7

- Problem/Errors monitoring and description
- Responsibilities search
- System description
- Escalation procedures

## On-call or second tier support

- Root cause analyze
- Temporary/Quick fix
- Escalation by responsibility
- Vendor/Application escalation

## Third level Application and SA support

- Subsystem/Application administration  
Permanent fix
- Documentation/Web maintenance
- System Tests

# SYSTEM ADMINISTRATOR DESKTOP



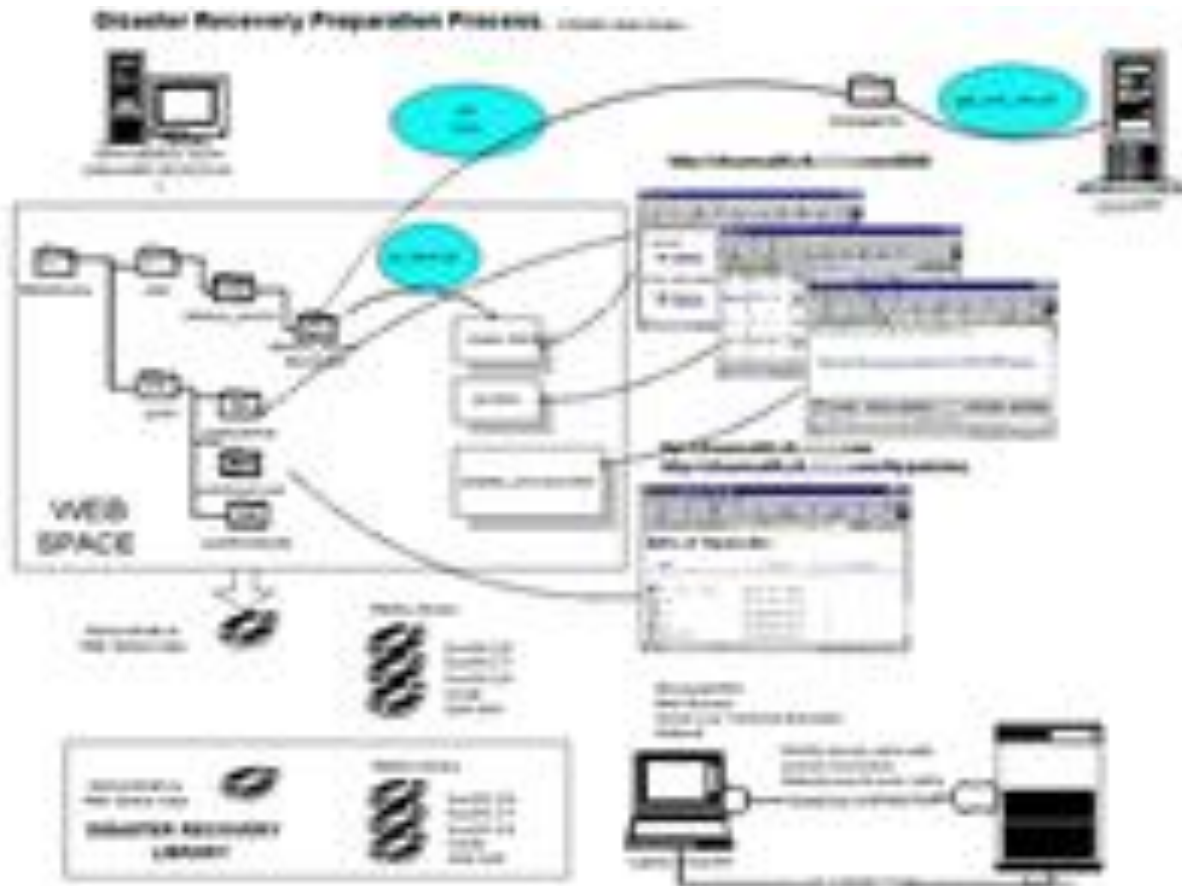
## Administrator Desktop

- System Monitoring
- Tickets tracking
- Events tracking
- On-line fix
- Standards following

Administrator desktop could be implemented as a workstation, connected to the administrative server, or as a web service, located on the same standalone workplace or laptop

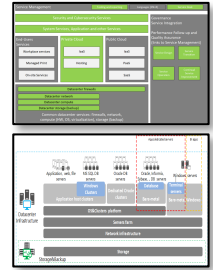


# MOBILE SYSTEM AND DR PROCEDURE



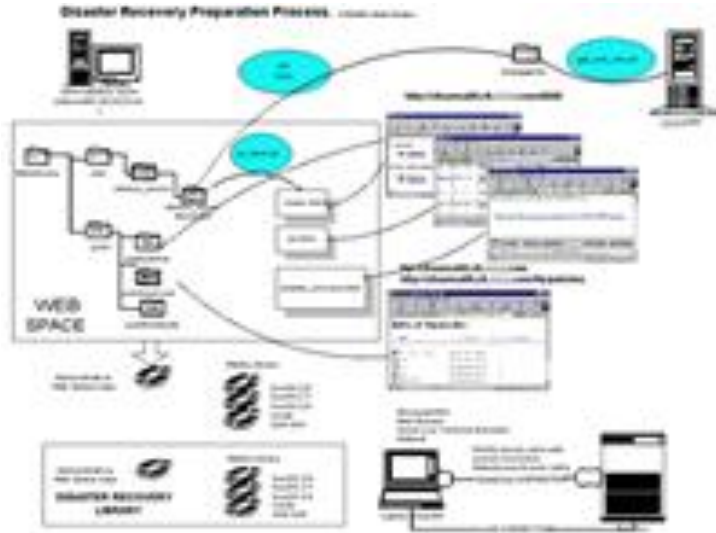


# BUSINESS PROCESS REENGINEERING

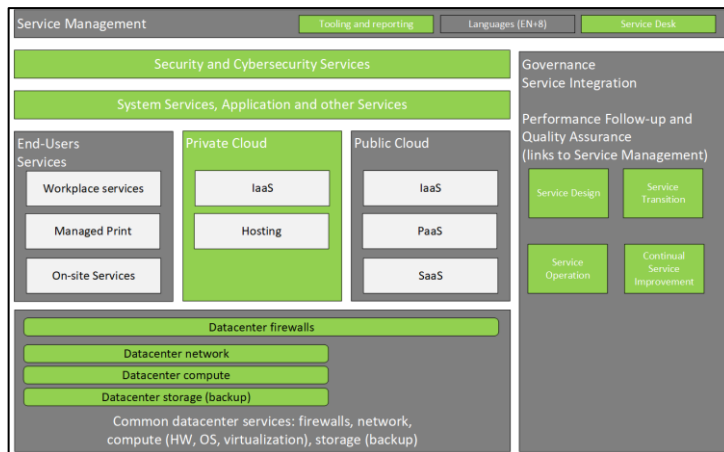


- Documented business processes
- Business processes supported by the web structure
- Standards and procedures availability
- Technical staff support
- Actual business structure
- Actual relations and responsibilities

# WHAT'S IMPLEMENTED



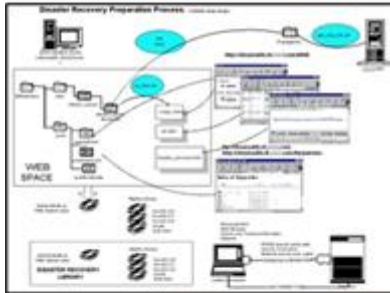
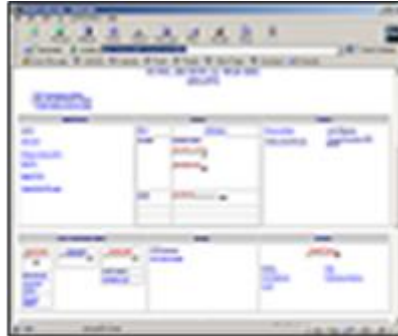
- Web Server
- Web relocation (mobile system)
- System disaster recovery from the mobile system
- On-call mobile system
- Three level support
- Hardware/system configuration info and database.
- Application info.
- System/Applications monitoring
- Vendor/System/Application escalation procedures
- System/Application/Projects logs.
- Backup schedules log and reports
- ISO9000 support
- Servers/Persons database
- Automated data integration
- ...



# ADVANTAGES

From

- Unstable administration
- Undefined escalation procedures
- Unknown system configuration
- System dependency from the “personal knowledge”
- High requirements for the technical personal



To



- Stable and clear administration
- Standard escalation procedures and update
- Clear system configuration
- Knowledge sharing
- Lower requirements for the technical personal
- ISO9000
- Disaster recovery mobile centers

# SUMMARY OF KEY BENEFITS

- TechWeb streamlines system administration through real-time monitoring.
- It provides an integrated knowledge base for quick reference.
- Ensures compliance with ISO9000 standards.
- Supports disaster recovery with mobile solutions.
- Reduces dependency on personal knowledge through standardized procedures.