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Telecommuting Security

COV Security Conference:
IT Security – Enabling Business

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Abstract

- In an age where employee flexibility is a must, telecommuting security is a hot button issue. This session will focus on how to secure the Enterprise when its boundaries are constantly expanding. The presenter will focus on concepts such as Remote Access, BYOD at Home, developing a telecommuting virtualization strategy, and the related ROI for the business.

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TELECOMMUTING

The Big Picture



Empowering the next Generation

- Understanding the Big Picture of Telecommuting
 - The Human Factor
 - The Technology Toolkit
 - Security
 - The Process
 - The Challenges
 - The Performance Expectation
 - The ROI



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The Human Factor

Digital Natives and Immigrants

Digital Natives

- New Generation Workers
 - Gen Y and Millennials
- 8-28 year olds grew up with technology
- Technology taken for granted, far-reaching capabilities assumed
- Different workplace attitude and practices
 - Blurring of work and leisure
 - Innately comfortable with technology as a 'consumable'
 - Used to direct control over posted content (MySpace, Facebook, YouTube, etc.)



Digital Immigrants

- Baby Boomers
- No natural affinity with emerging technologies
- Technology has to be 'learned'
- Grew up with the rotary phone!



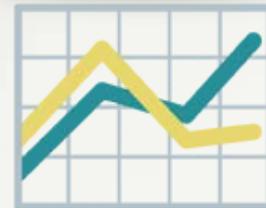
Blended Work/Life Balance

- **Provide a supportive work environment**
 - Workspace Safety & Ergonomic work space
 - Limiting Distractions
- **Know & understand the legal ramifications**
 - Voluntary work arrangement
 - Worker's Comp
 - Set Hours of work (Flex)
- **Expenses**
 - Tax implications
 - Personal expenses incurred (DSL & ISP providers)
- **Encourage acceptable behaviors**
 - Not isolated from customers, peers and supervisors
 - Handling of Sensitive Information
 - Sanctions & Disciplinary procedures



Blended Work/Life Balance

- **Use multiple communications channels**
 - Phone
 - Modem/Fax
 - Pager/Cellular
 - Instant Messaging
- **Track performance**
 - Already meets or exceeds expectations
 - Work with minimal supervision
 - Attendance at Meetings
- **Execute Use Agreement**
 - Care & Security of Equipment & Data
- **Get Support**
 - Problem resolution



Workspace Safety

- **Home Self-Assessment**
 - Home vs. Wi-Fi convenience centers (i.e., Starbucks, etc.)
 - Ergonomics
 - Piggybacking
 - Shoulder surfing
 - Private work area
 - Unobstructed Exits
 - UPS



Communication & Collaboration

- Communication Tools
 - Telepresence
 - Web based video chat
 - Web/Ex
 - Conference calls
 - Desktop Sharing
 - Cloud Services
 - Virtual
 - Social Media



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The Technology Toolkit

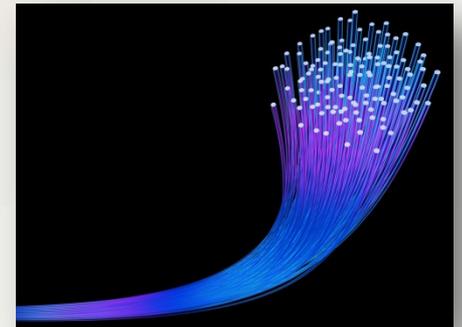
Basic Telework Services

- Email and calendar
- Online collaboration
- Voicemail
- Teleconference
- Video & Web Conferencing
- LAN/File Share Access
- Remote Access to Applications



Architecture

- Laptop or desktop computer
 - Word processing, spreadsheets, email
- Broadband internet connection
 - Email file sharing, text messaging, Voice over IP, videoconferencing, web access
- Video & Web Collaboration
 - Digital camera, video card, videoconferencing, microphone, speakers on laptop/pc
- VoIP Softphone
 - Call agents & call management
 - Set up for maximum security and performance
 - Caller can't tell the difference from the county office



Personal Devices vs. County Owned Devices

Personal Devices

- Is voluntary
- Must be compatible with county infrastructure.
- Employee is responsible for installation, maintenance, repair or replacement of employee owned hardware, software or other equipment
- Must notify IST if equipment malfunctions
- If experiencing equipment failure, return to work site

County-Owned Devices

- Must use VPN for remote Access
- Devices loaded with image of minimum security standard for networked devices
- Only use approved remote desktop software
- Approved Browsers



Hardware/Software

Hardware

- Laptop
- Mobile device
- Desktop Computer
- Flash drives
- Headphones & microphones
- Webcam
- Modem
- Fax
- Printer
- Surge Protector



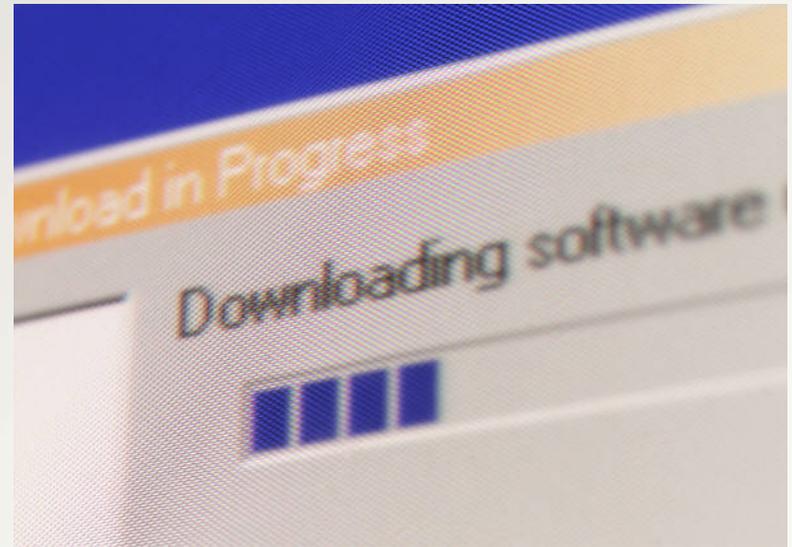
Connectivity Components

- Digital Subscriber Line (DSL)
- Internet Service Provider (ISP)
- Virtual Private Network (VPN)
- Remote Access Software
- Personal Firewall Software
- Remote Control Software (approved)
- Virus Protection Software
- Telephony Integration (VoIP soft phone)
- Physical location to callers should be invisible
- Containerization (Good)
- Collaborative Workspaces
- Desktop Virtualization
 - Delivers full set of applications over the network instead of installing and running software and the operating system locally



Basic Telework Configuration

- Meet or exceed recommended configuration requirements
 - VoIP Softphone
 - Adobe Acrobat
 - VPN Client
 - Exchange and Outlook services
 - Office 2010
 - Encryption
 - Virus Protection
 - Current Browsers
 - Virtual Terminal Services



Telecommunications

- Voice Features
- Data line
- Fax line
- Text
- Chat/Instant Messaging
- Paging
- Cellular



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Security

Risks

- Data Leakage
 - Loss of intellectual property (USB, Thumb drive, flash drive, etc.)
 - Personal Storage Devices
- Social engineering
 - Phishing (passwords)
- Eavesdroppers – public Wi-Fi sniffing
 - Data at risk from the device to the wireless access points (in coffee shops, etc.)
- Unmanaged BYOD
 - Health of personal device b(malware, viruses, etc.)
- Online File Sharing
- Acceptable Use vs. Prohibited Use
 - Web filtering



Security Considerations

- Ensure Software up to date (Patching)
- Run anti-virus
- Prevent ID theft
- Avoid malware
- Use discretion when downloading programs
- Protect passwords
- Back up files
- Physical Theft
- Wireless network security
- Whole Disk Encryption
- Personal Firewalls



Security Components

- Internet Service Provider (ISP)
- Router
- Wi-Fi with Security activated (WPA)
- Personal Firewall
- Anti-Virus
- VPN Client
- Remote Access Client
- CERT (Self-signed certificate)
- Authentication Credentials
- Strong Passwords
- 2-Factor Authentication or Token (if required for regulatory compliance)
- VoIP Softphone (no one needs to know where you are physically working)
- Presence client (Raise your hand!)



Security Best Practices

- Implement a policy to include acceptable use provisions.
- Require security training for users.
- Require password lockout with strong password.
- Require supported operating systems.
- Vulnerability and security patching must remain up to date.
- Mobile Device Management Solution: policy and configuration management tool that prevents personal devices from connecting unless they follow appropriate procedures.
- Containerization: Separate data storage areas for personal and business data.
- Remote wipe of business data.
- Prohibit storing sensitive data on devices not owned by the business.
- Encrypt all sensitive data.
- Address approved app stores.
- Lost, stolen or compromised device recovery

NIST 800-46 Guide to Enterprise Telework & Remote Access



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Process

Telework Package

- **Program package consists of:**
 - Telework Application
 - Telework Guidelines
 - Telework Agreement
 - Telework Privacy and Security Agreement
 - Telework Home Safety Self-Certification Checklist
 - Tips for the Teleworker



The Onboarding Process

- **Steps to Get Connected**

- Telework Application Request
- Establish Performance Tracking Measures
- Obtain Approval
- Prepare secure workspace
- Conduct Workspace Risk Assessment
- Determine type of use: Personal Device or County-Owned Device
- Attend Security Awareness Training
- Install appropriate approved connectivity software
- Configure or Acquire Telecommuting Image



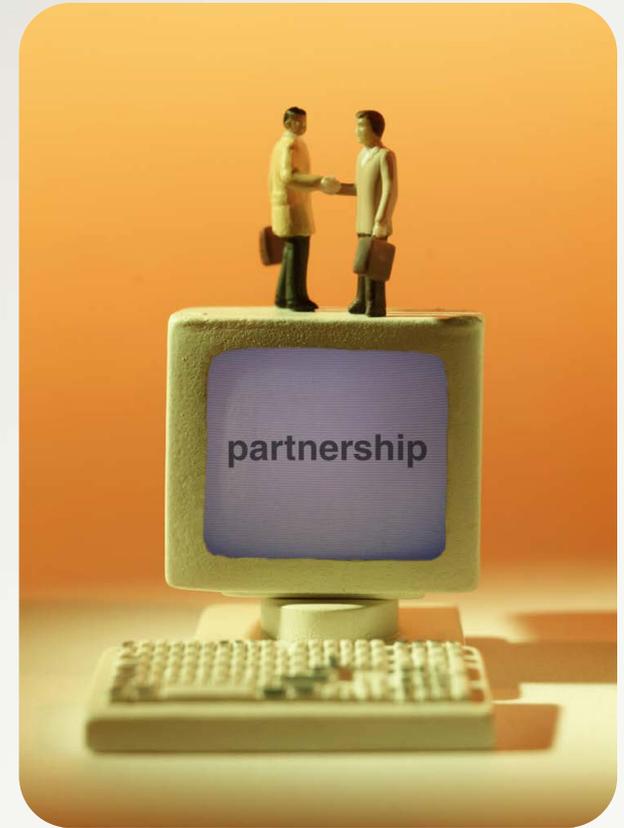
How to Connect

- **Log in to VPN from home**
 - Use a VPN client – the VPN client works as a tunnel which connects your computer to the county secure network.
 - The traffic that passes between you and the county is encrypted by the VPN client, securing the data as it is transferred



Use Agreement

- I will safeguard my VPN access and well as all of its components I will only use VPN on a computer that is protected by a personal firewall and that has up to date virus protection. I understand the VPN usage is tied to my county position and my VPN access will be reevaluated if my position changes. I understand that the computer I use to connect to the VPN is subject to scanning from the county to check compliance.



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Challenges

Potential for Personal Costs

- **County not obligated to;**
 - Fix personal devices or to provide software support
 - Encumber costs directly related to local and long distance phone calls will not be covered (Teleworkers should minimize direct costs)
 - Pay for telephone installation charges
 - Some carriers may have fees for apps container or business apps.
 - Internet service provider costs for home internet service



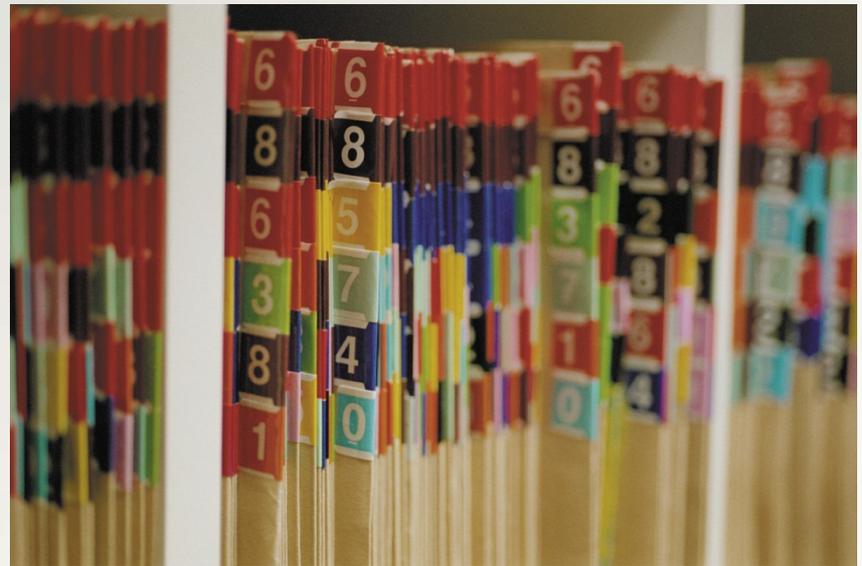
Performance

- Distractions
- Worker Isolation
 - Reduced exposure and interaction with co-workers
- Lack of supervision
- Determining Presence
 - Difficulty locating teleworkers (In/Out Board)
- Not be a substitute for childcare
- FOIA and other legal matters
- Communications
- Worker Isolation



Record Keeping

- Archive
- DLP
- FOIA
- Subpoena
- Retention
- LAN/Share Drive
- Backup



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Performance Expectations

Role: Chief Information Officer

- Serves as the executive sponsor of the department's telework program.
- Sets the tone and direction for telework policies and goals.
- Provides information on the status of the telework program to the Leadership Team, department heads, as well as other organizations and employers.



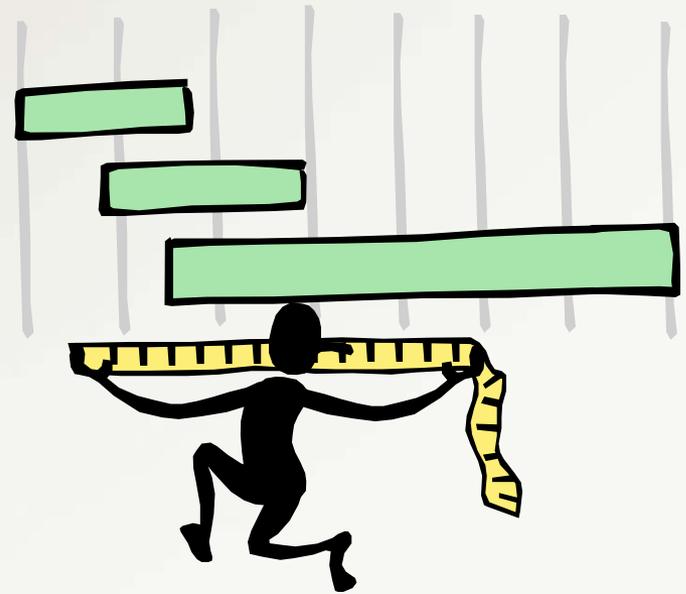
Role: IT Department

- Manages technology, telecommunications and security infrastructure
- Provides technical training to support teleworkers.
- Provides technical support and problem escalation for teleworkers through an IT help desk
- Provides options for remote access to access the county's data and telecommunications network.
- Provides PC or laptop for employee use at home
- Provides expertise and consultation to the telework program



Role: HRM

- **Provides staff support for telework to include:**
 - Preparing, maintaining and disseminating telework program information (training material, Web pages, reports, articles, publications, announcements and notices)
 - Training and briefings for managers and teleworkers
 - Tracking telework enrollments
 - Preparing fiscal year budget for telework program and monitoring expenditures
 - Coordinating with IT on issues affecting telework



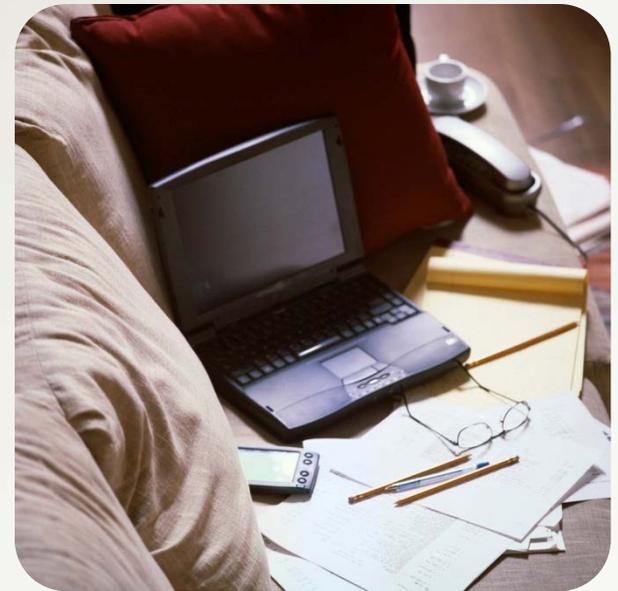
Role: Manager & Supervisors

- **Managers and supervisors are responsible for;**
 - Implementing telework arrangements as practicable in their work areas
 - Providing department-level support for teleworkers (approving or denying employee requests for telework)
 - Reviewing and authorizing required forms for approved telework arrangements and technology requests
 - Providing an environment that is conducive to the telework initiative
 - Providing scheduling and logistical support to the teleworkers.
 - Obtaining feedback regarding the impact of the telework arrangement.



Role: Teleworker

- Teleworkers are responsible for;
 - Keeping informed of the county's telework practices and procedures, and using the telework program forms.
 - Remaining accessible to customers, co-workers and supervisors.
 - Structuring telework to be as transparent as possible to customers, co-workers and supervisors.
 - Planning and organizing tasks for telework for efficiency and productivity.
 - Tracking the work performed and communicating results as requested by the supervisor.
 - Developing proficiency in the use of the technology required for telework.



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ROI & Benefits

ROI & Benefits

- Increased worker productivity
- Improved employee morale
- Reduced employee absenteeism
- Reduced overhead for operational expenses
- Improved employee retention and recruitment
- Reduced use of sick time or personal time
- Readiness for business continuity
- Go Green – Environmentally Friendly



Q & A

- Questions?

