



**This Is a Disaster  
Declaration!**

**This is not a test**



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## **Case Study - Disaster Declarations !!**

2 Disasters to walk through real life events

Both companies are in the Manufacturing business with the corporate datacenter supporting several sales offices, distribution facilities and manufacturing plants scattered throughout the US

We will refer to these as the **Smith Corporation** and the **Zed Company**



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## Definition of a Disaster

A sudden, unplanned event that causes great damage or loss to an organization

The time factor determines whether an interruption in service is an inconvenience or a disaster. The time factor varies from organization to organization



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## What is Disaster Recovery?

Reaction to a sudden, unplanned event that enables an organization to continue critical business functions until normal business operations resume.



**"...It is not enough to arrange for hardware replacement;...  
planning must address continuation of business operations"**



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## What is a Disaster ?

ANYTHING !!!!

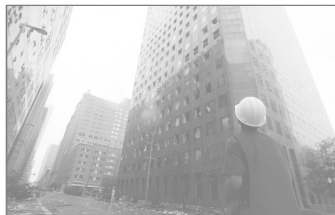
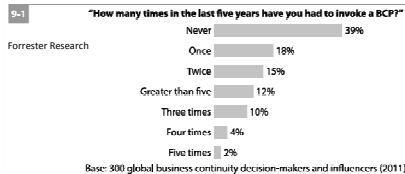
That stops your business from functioning & that cannot be corrected within an acceptable amount of time....



## Companies Regularly Deal with Natural and Man-Made Disasters

Risk is increasing

Disasters happen





## What constitutes a disaster in your organization ?

Disaster Recovery deliverables are based on:

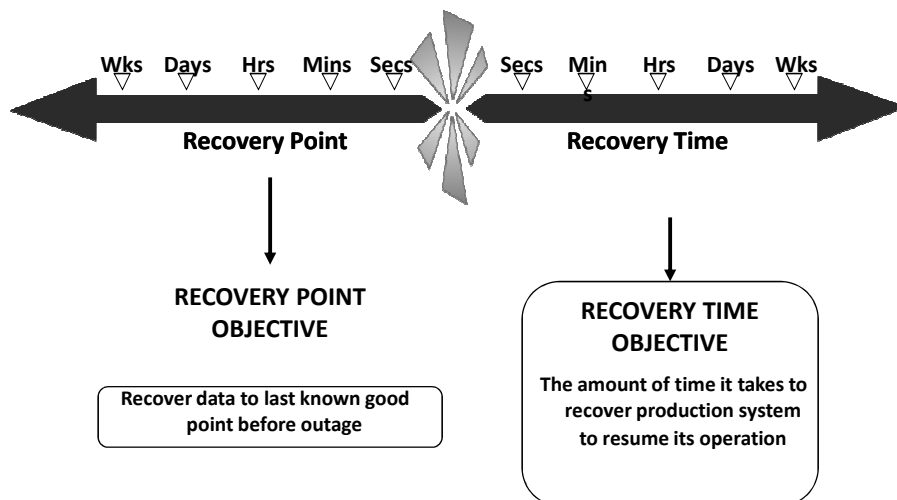
RPO – Recovery Point Objectives

RTO - Recovery Time Objectives



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## Management Awareness



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## The Products of a DR Plan

**Who** will execute recovery actions

**What** is needed to continue, resume, recover or restore business functions

**When** business functions and operations must resume

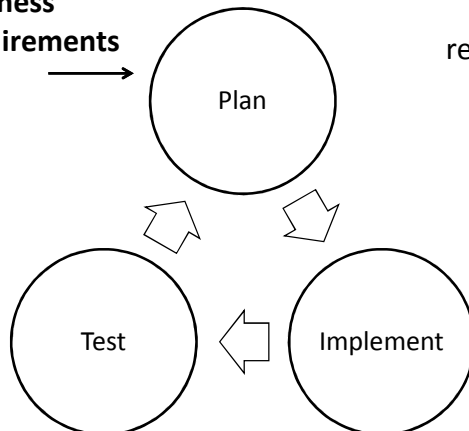
**Where** to go to resume corporate, business & operational functions

**How** detailed procedures for continuity, resumption, recovery or restoration

**CLASSIC: WHO-WHAT-WHERE-WHEN-HOW**

## DR Planning is an ongoing process

**Business requirements**



...to be prepared, you must regularly go through the cycle

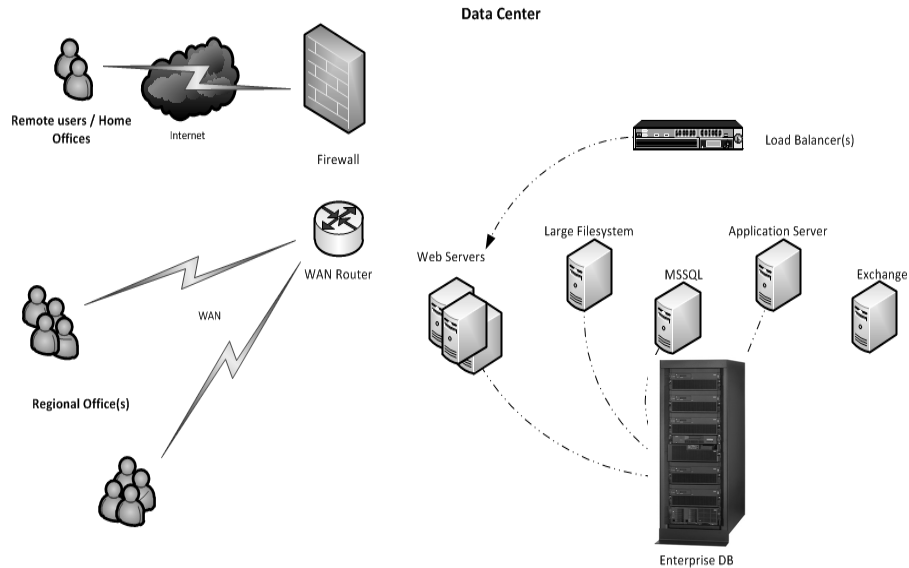




## The Smith Corporation Profile

- ✓ Last DR test 1 year ago
- ✓ 100% successful - 14 hours
- ✓ Test annually with 4 IT Staff
- ✓ Trained in recovery of the system
  - ✓ Tapes sent offsite daily
  - ✓ RTO & RPO - 24 hours
  - ✓ Business Signed off

## The Smith Corporation Profile





## Smith Corp - Disaster

- Water Damage under computer room floor...on the 32<sup>nd</sup> Floor
- Severe power failure – Wednesday night 7 pm
- Site expected to be down well past the weekend.
- Disaster Declared ! 11pm

4 Hours



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## Smith Corp - Disaster

- Person declaring disaster " Not authorized " and unfamiliar with password activation procedures.
- Hot-site begins preparation of hotsite, but requests authorized individual to call within the next hour

4 hours



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## Smith Corp - Startup Issues

- Hot-Site equipment is available 4 hours after initial call
- Smith Corp still trying to locate authorized staff ( Alternates not available or no longer employed )
- Disaster Declaration fee of \$ 7500.00. What's this ?

8 hours



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## Smith Corp - Startup Issues

- Staff unable to recall tapes en-route to hot-site
- Offsite Storage Vendor will not accept phone requests



“ You must signon to Web site to recall tape media “



**No App for retrieving your tapes**

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## Smith Corp - Startup Issues

- Utilize Hot-Site infrastructure - Recall tapes
- IBM Power - Full System Save available & Wednesday night backup which was successful
- x86 – Last full and incremental backups successful
- Tapes are requested for Emergency Service Delivery
- All required tape media arrives - **90** Minutes



9.5 hours

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## Smith Corp - Startup Issues

- X86 backup policies includes:
  - VMDK saved to Local VTL
  - Tape Backups Include:
    - All file system volumes
    - All databases



Issue - Tapes arrive in locked box !!!



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## Smith Corp - Startup Issues

- IBM Power Daily backup procedure includes:
  - SAVSECDTA
  - SAVCFG
  - SAVLIB \* ALLUSR ( save while active )
  - SAVDLO
  - SAV



Procedures DVD, Bare Metal DVD's

Issue - Tapes arrive in locked box from another provider



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## Smith Corp - Startup Issues

- Who has the Key ???



- Decision is made! Don't wait just break the locks!
- 30 minutes is lost before decision is made.



**10 hours**



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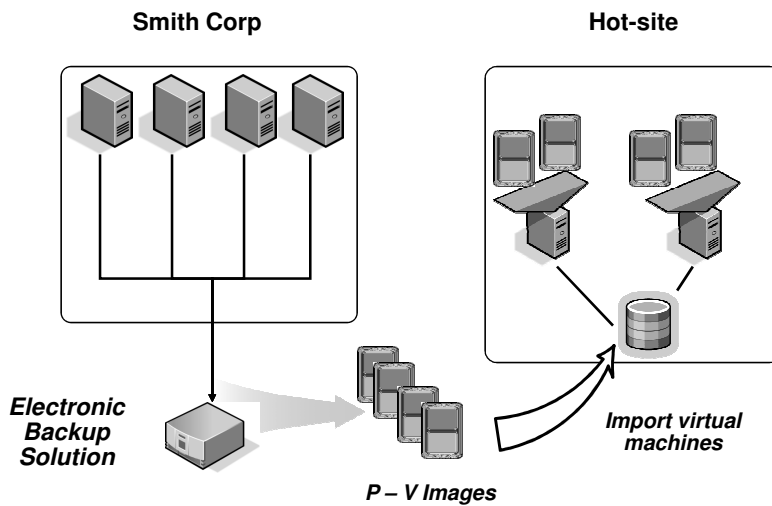
### Smith Corp - Startup Issues

- IBM Power Backups – System State Saved on older tape media format
- Firmware and Operating system cannot be restored from tape.
- Daily procedures saved on LTO4 ( current new tape format )
  
- Hot-Site staff switch tape drives to accommodate System state save from older tape technology

12 hours



### Physical Servers to a Virtual Solution





## Smith Corp - Startup Issues

- Electronic Backup Solution ( VTL ) physically removed from data center and transported to hot-site



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## Smith Corp - Off to the races

- Procedure execution for IBM Power recovery starts
- Procedure execution for Wintel x86 Data Layer recovery starts
- Notice goes out to the business of an estimated restoration completion of 14 hours from NOW !

**16 hours**



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## Smith Corp - Update

- ✓ Tape restore halted due to a message
- ✓ Step omitted \*HOLD QSYSOPR message queue  
Approximately 45 minutes lost
- ✓ Called all 3<sup>rd</sup> party vendors for keys.
- ✓ New notice is sent to Business for restoration completion  
14 hours from NOW !

**17 hours**



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## Smith Corp - System ready

- System is restored in 8 hours. Available Early !!
- Systems are checked. All files are restored
- Non critical data omitted
- All 3<sup>rd</sup> party keys applied except for one as procedure is missing and waiting for vendor call back

**25 hours**



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## Smith Corp - System ready

Testers have given the green light



We are back in business

26 hours



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## Report Card - Smith Corp

- ✓ Need to keep Authorized staff for Declaration up to date
- ✓ Know your Offsite Vendor limits
- ✓ Locked Offsite Storage Boxes
- ✓ Keep Hot-site in the know of hardware changes
- ✓ Utilize one tape format for backups ( Enterprise )
- ✓ Electronic Backup Solution ( VTL Onsite – Major Gap )



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## Report Card - Smith Corp

- ✓ Save virtual machines images to Tape & store offsite
- ✓ Missed Step - Human error
- ✓ The entire staff was very well trained
- ✓ 2 Staffers were on holidays - the other 2 came through
- ✓ Third party procedures included key retrieval & activation



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## The Zed Company Profile

- ✓ Last DR test 8 months ago.
- ✓ 100% successful - 17 hours
- ✓ A special save to facilitate DR test.
- ✓ Have never tested a mid week recovery.
- ✓ Recently switched to a new software backup solution
- ✓ No Generator ( Not in Budget )

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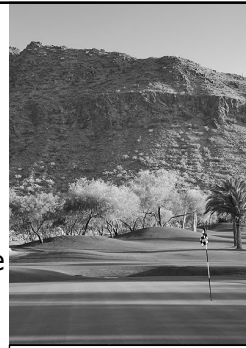
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San Diego , Sept 2011  
2.7 million electricity customers  
7 million people, mostly in San Diego.

The largest power failure in California history

### **The Zed Company Profile**

- ✓ Primary Technical Owner of DR conducted last 2 DR tests in Phoenix.
- ✓ Alternate person ran operations back at the office
  - ✓ Tapes sent offsite daily
  - ✓ RTO 48 hours
  - ✓ RPO 24 hours







## Zed Company - Startup Issues

- Declared a disaster but no – one shows up !
- Waiting on staff to arrive – Unable to locate client - Voice mail. ( Dead cell Phone )

5 hours



- Client returns call 2 hours later !  
Power is slowly coming on in parts of the city  
He has heard his will come on shortly.

7 hours



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## Zed Company - Startup Issues

- Hot-site suggests tapes get shipped to start recovery just in case. Client agrees
- Client does not know which tapes he needs.
- All Backup Software recovery reports are **kept** on the system
- Suggest sending last full & all of this weeks dailies.  
Hot-site staff try to recover

9 hours

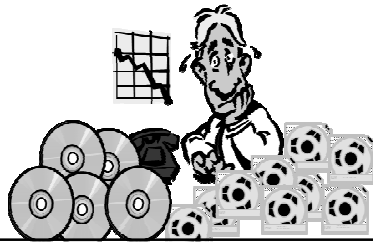


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## Zed Company - Startup Issues

- Tape media arrives
- A box of 14 - LTO tapes in NO particular order.
- No media report arrived with tapes
- Which one contains the catalog ?
- Staff loads all tapes into library, inventories using backup software
  
- DR Plan missing at hot site- Alternate person goes back to site to obtain the plan



10.5 hours



## Zed Company - Startup Issues

- Signed into Offsite Tape Vendor web site to determine what backup sets arrived at hot site
- Found tape catalog as labeled in offsite tape vendor inventory
- Unable to restore tape catalog – “invalid catalog error”
- Manually cataloged each tape - 6.5 hours wasted!

17 hours





## Zed Company - Startup Issues

- Management are very uptight...Name calling .....
- Every action/ or decision is now being questioned
- Pressure is probably at a peak as Plant locations are asking when ???



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## Zed Company - Startup Issues

Primary Technical Staff person now en-route to hot-site to assist.

DR Procedures arrive with Primary person



21 hours



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## Zed Company - Startup Issues

- The correct backup sets requested from offsite vendor
- Tapes were cataloged, fortunately the data was found
- Start recovery of rest of the system

29 hours



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## Zed Company - Startup Issues

- **Senior** management ( not IT ) summons lead Technical person back as power is now coming on across the street. Power is Expected anytime now.
- Declaration is HALTED & tapes are requested back. Against recommendations !



31 hours



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## Zed Company - Back on Again

- Client calls back 4 hours later. Requesting the restore to continue. Power still an issue.
- Hot-Site informs client the system has been scratched and they must start all over again.
- Client will bring tapes to begin reload.

34 hours



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## Zed Company - Back on Again

No staff are available. Everyone exhausted at this point.



36 hours



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## Zed Company - Back on Again

- Business wants a guarantee the system will be up in 8 hours. Business orders severely affected
- Issues - Client didn't maintain their backup environment
- First test since **new** backup software installed



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## Zed Company - Back on Again

- Restore starts immediately. This time with tapes already cataloged and DR documentation in hand
- System is restored in 17 hours
- Startup procedures incomplete, but manage to get ERP services up.

**53 hours**



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## Report Card - Zed Company

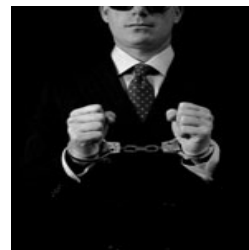
- Client Declares and Stops communicating with team
- Indecisive
- Backup policies not documented. A mystery to all !
- New Backup Software recovery never tested
- Backup Software reporting not sent offsite
- Tapes shipped. Documentation incomplete



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## Report Card - Zed Company

- Wrong person sent to recover system
- DR Plan unavailable
- Senior Management Pressure
- Staff in a state of flux - Coming & going
- Halted Recovery
- Restart all over again.
- Lack of staff delegation & training
- No Generator ( Now in Budget )



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## The ZED Company

Does Your Business Have a Say!!



Do the bean counters know  
what IT can deliver ?



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## Report Card - Zed Company

- Management Shocked that the IT folks lost all orders
- 24 Hour RPO - Who agreed to this ?
- System was not available for 2 days
- 48 Hour RTO - Who agreed to this ?



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## What about your email? Zed Company

Email has become Mission Critical !

- Email represents the way you communicate with customers, partners, and employees.
- In a disaster situation, this may be a key component of your communications strategy.
- Is Email listed as a critical application for your organization and included in your disaster recovery plan?



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## Testing Summary

Recovering from a Disaster is overwhelming  
This can lead to frustration & loss of motivation

Frequent Testing results in:

- ✓ People that are comfortable in familiar situations
- ✓ Visually see the recovery goal & efforts
- ✓ Confidence already in place
- ✓ Will staff be available when you need them most ?
  
- ✓ Audit your backup policies....NOW !!!!

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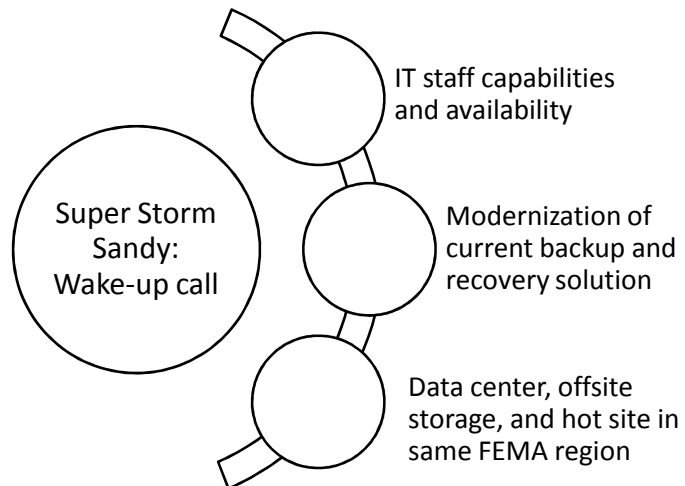


## Sandy – A Worthwhile look back at History

Advance warning...Do NOT wait  
For the Disaster to take you down

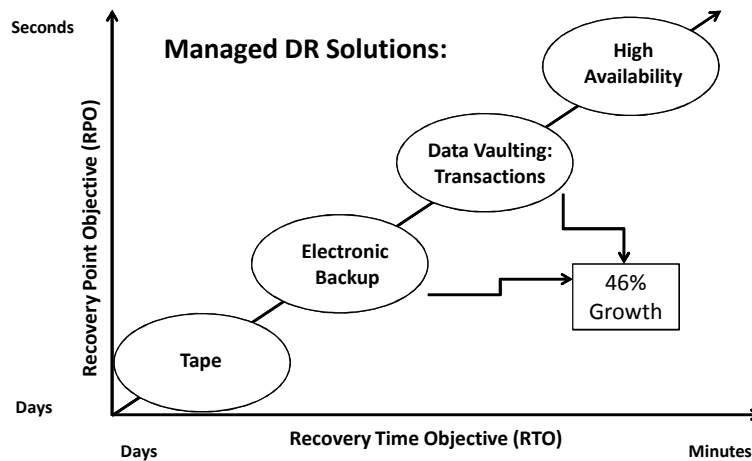


## Super Storm Sandy: Wake – Up Call



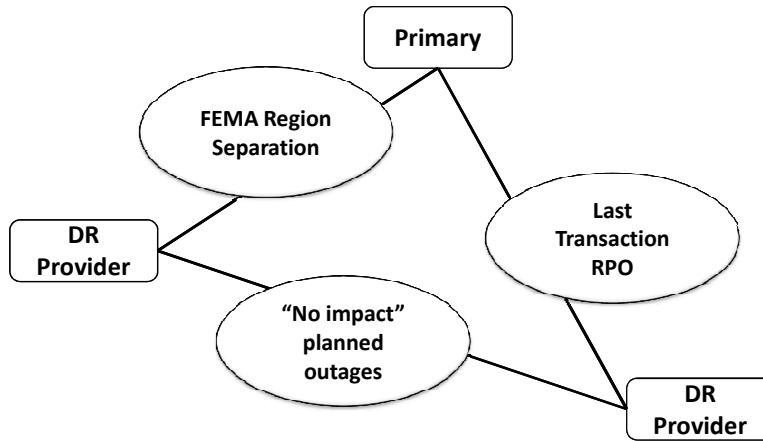


### Business Requirements Are Changing





## Multi-Site DR in the Cloud: Adds Another Layer of Service



## Importance of Business Resiliency

Organizations rely on technology to run their businesses  
Downtime is a business issue, not just a technology issue





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## Recoverability and Diversity

### DR challenges

- DR strategy does not meet business requirements
- IT staff does not have the time or expertise to manage DR
- Reconciling what the company needs vs. what it chooses to afford

### Business criteria

- Recoverability – Increasingly more aggressive RTO/RPO requirements
- Diversity – Range of IT application environments covered
- Affordability – Works with budget



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## IT Preparedness

Understand and are Ready

- Top Gun

Understand and are not Ready

- Sleepless in Seattle

Understand but don't want DRP

- Dumb and Dumber

Don't Understand. Why Bother !

- Clueless or Armageddon



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The **e** nd, Thank You!

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