Backups

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Agenda

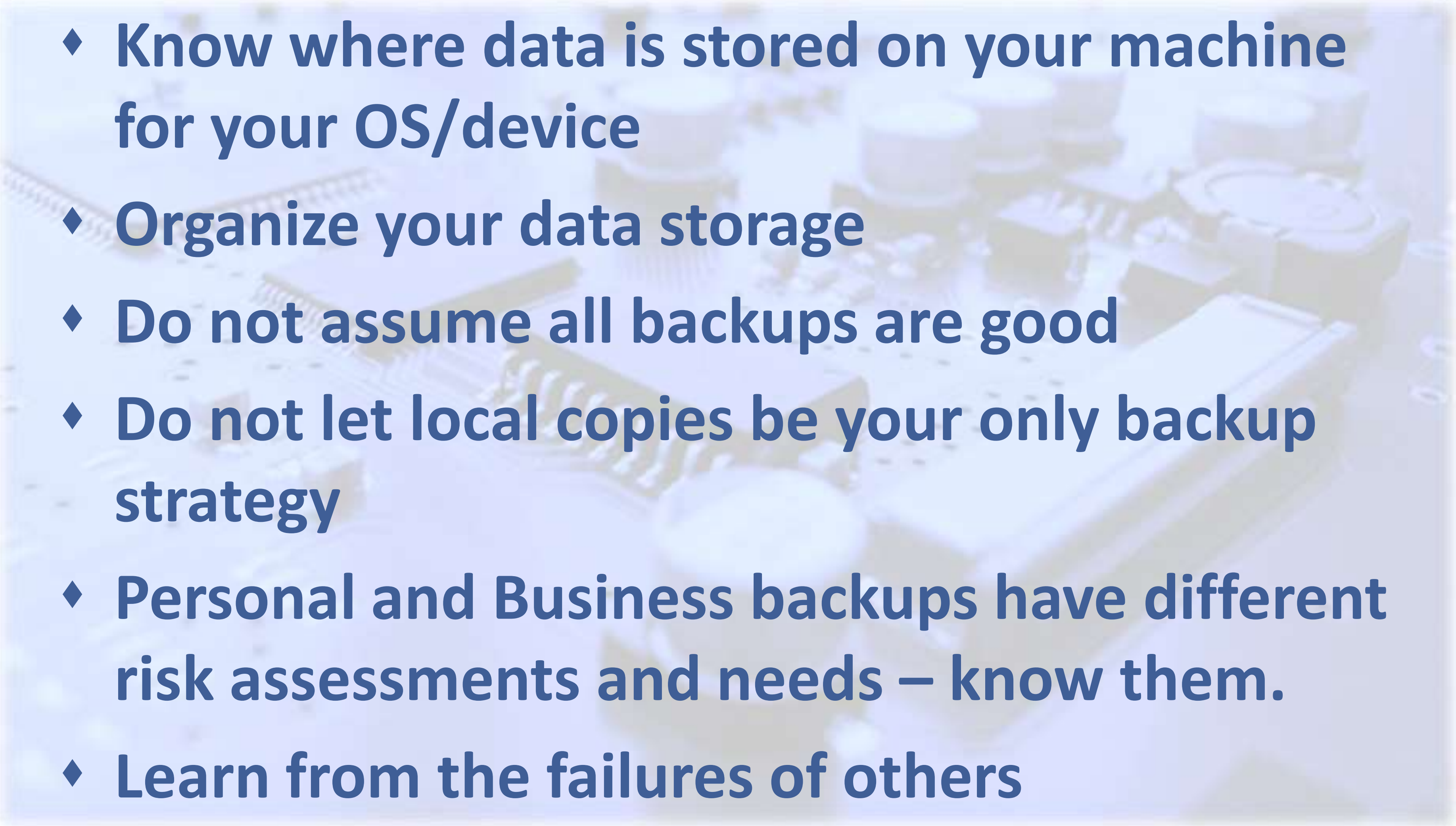
- Explain of a Backup and purpose
- Habits
- Discuss Types
- Risk/Scope
- Disasters and Recovery Options
- Software, Hardware
- Suggestions and Examples

What are Backups?

- A backup is used to restore data to a previous state/condition
- A backup is a duplicate of system, application, configuration, and user data.
- A backup may contain all or parts of system, application, configuration, or user data.

All recovery plans start with backups

Change some habits

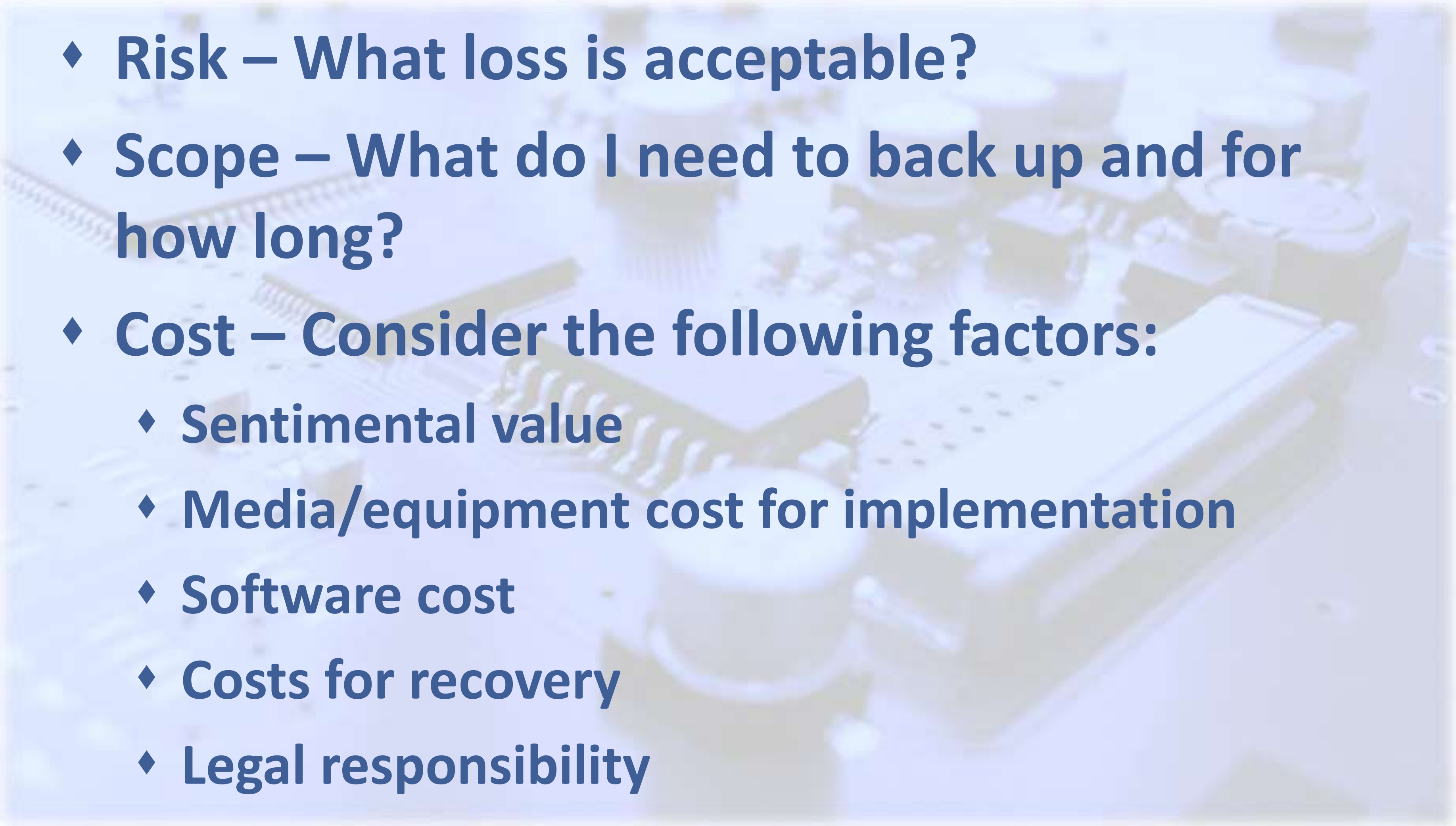


- Know where data is stored on your machine for your OS/device
- Organize your data storage
- Do not assume all backups are good
- Do not let local copies be your only backup strategy
- Personal and Business backups have different risk assessments and needs – know them.
- Learn from the failures of others

Types of backups

- Ad-hoc/Unstructured – pile of CDs, floppies, etc.
- Full – All files/data
- Incremental – files/data changed since last backup
- Differential – all files changed since last full
- Mirroring – (RAID1) replication of disk media in real time
- Continuous – byte/block level

Cost is relative to risk and scope



- Risk – What loss is acceptable?
- Scope – What do I need to back up and for how long?
- Cost – Consider the following factors:
  - Sentimental value
  - Media/equipment cost for implementation
  - Software cost
  - Costs for recovery
  - Legal responsibility

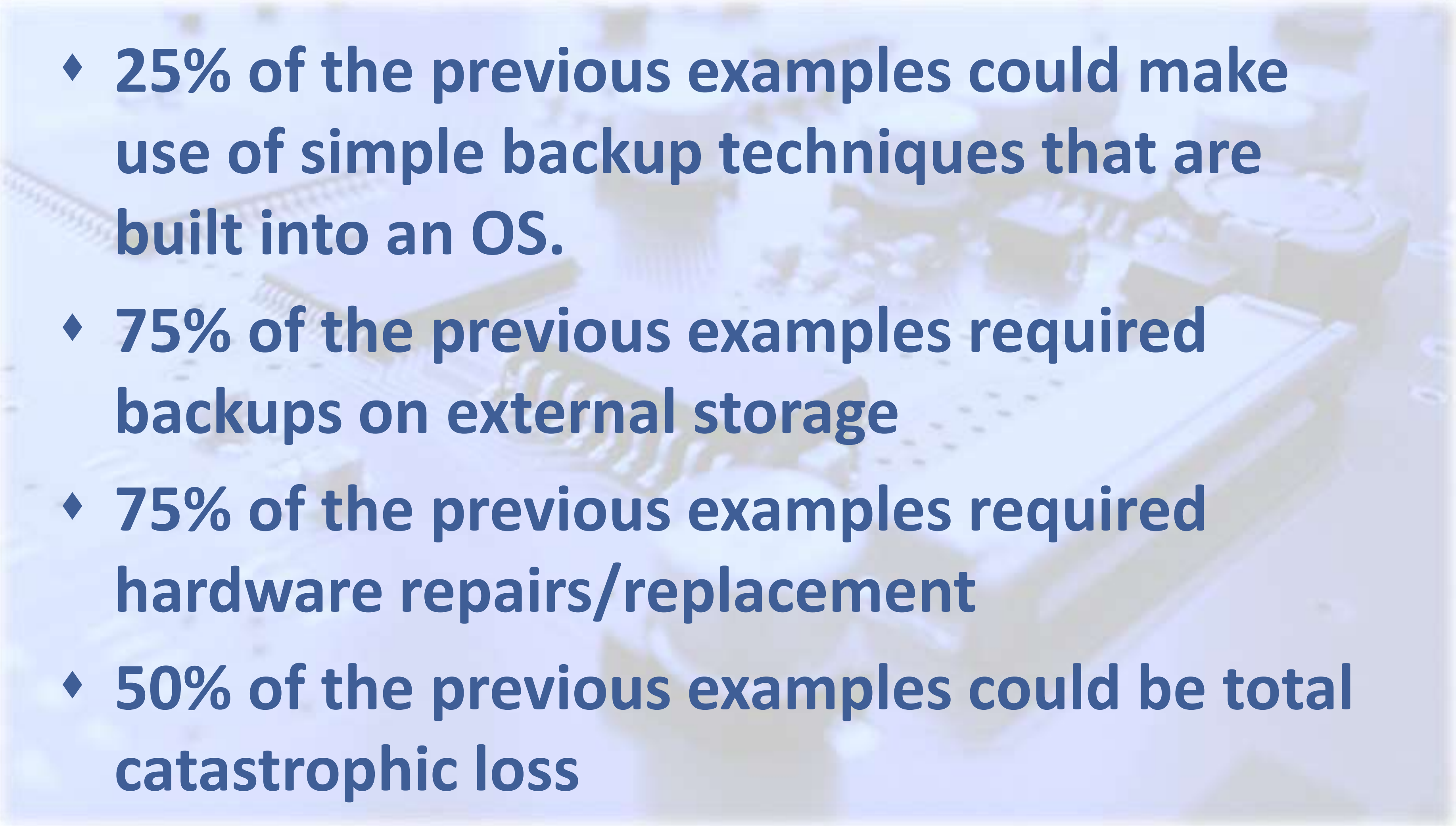
Disasters

- Delete/overwrite file
- System failure resulting in damaged/corrupted/inaccessible hard drive or contents
- External disasters – lightning, flood, fire, collapse, physical destruction
- Theft

Recovery Options

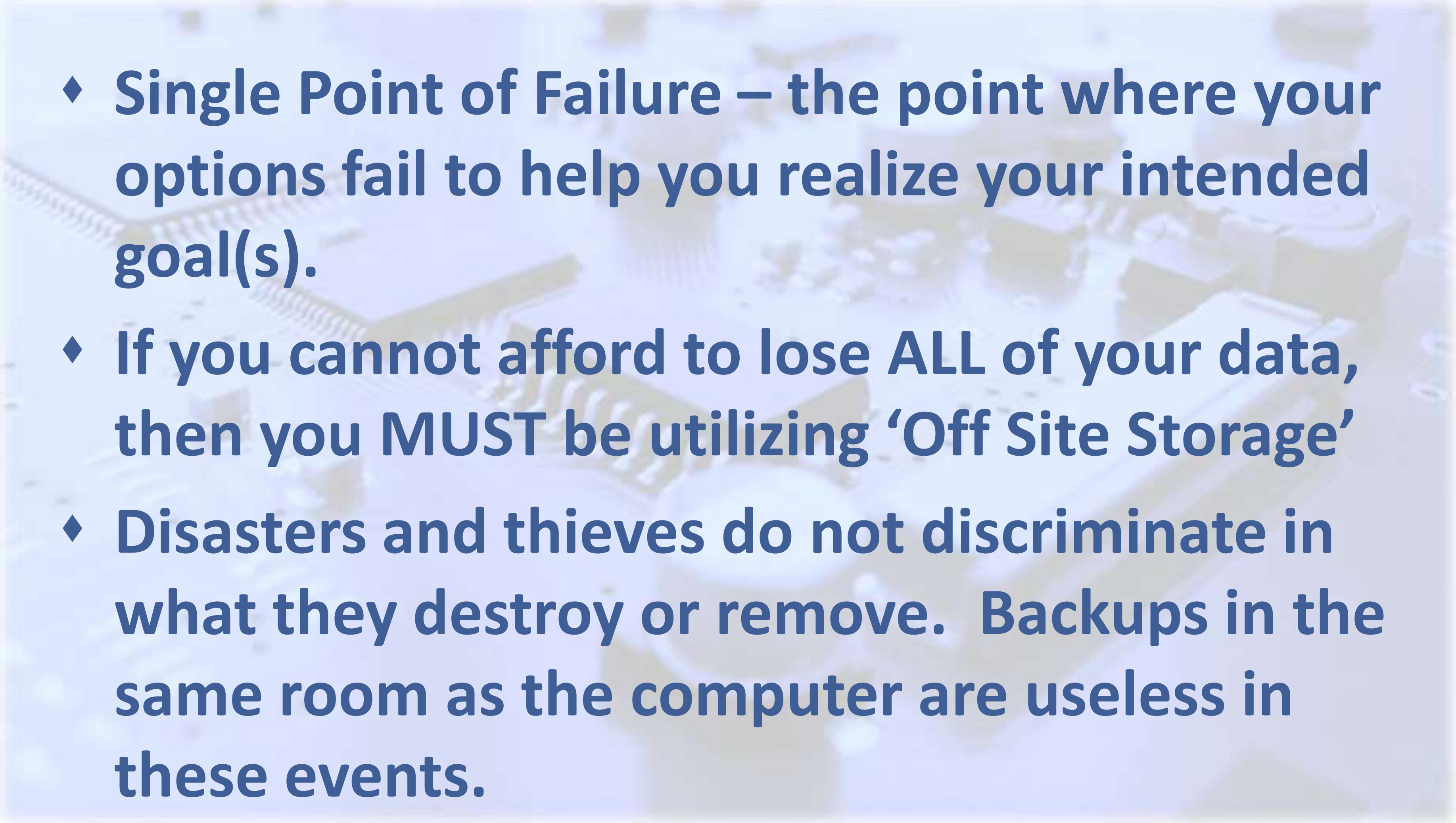
- Delete/Overwrite: Use ‘Recycle Bin’, ‘Time Machine’, ‘Previous Versions’, ‘Back In Time’, or restore from external media
- System failure: Repair/replace hardware and restore from external media
- External disasters: Repair/replace hardware and restore from external media
- Theft: Replace hardware and restore from external media

If you were paying attention



- 25% of the previous examples could make use of simple backup techniques that are built into an OS.
- 75% of the previous examples required backups on external storage
- 75% of the previous examples required hardware repairs/replacement
- 50% of the previous examples could be total catastrophic loss

Minimizing Catastrophic Loss

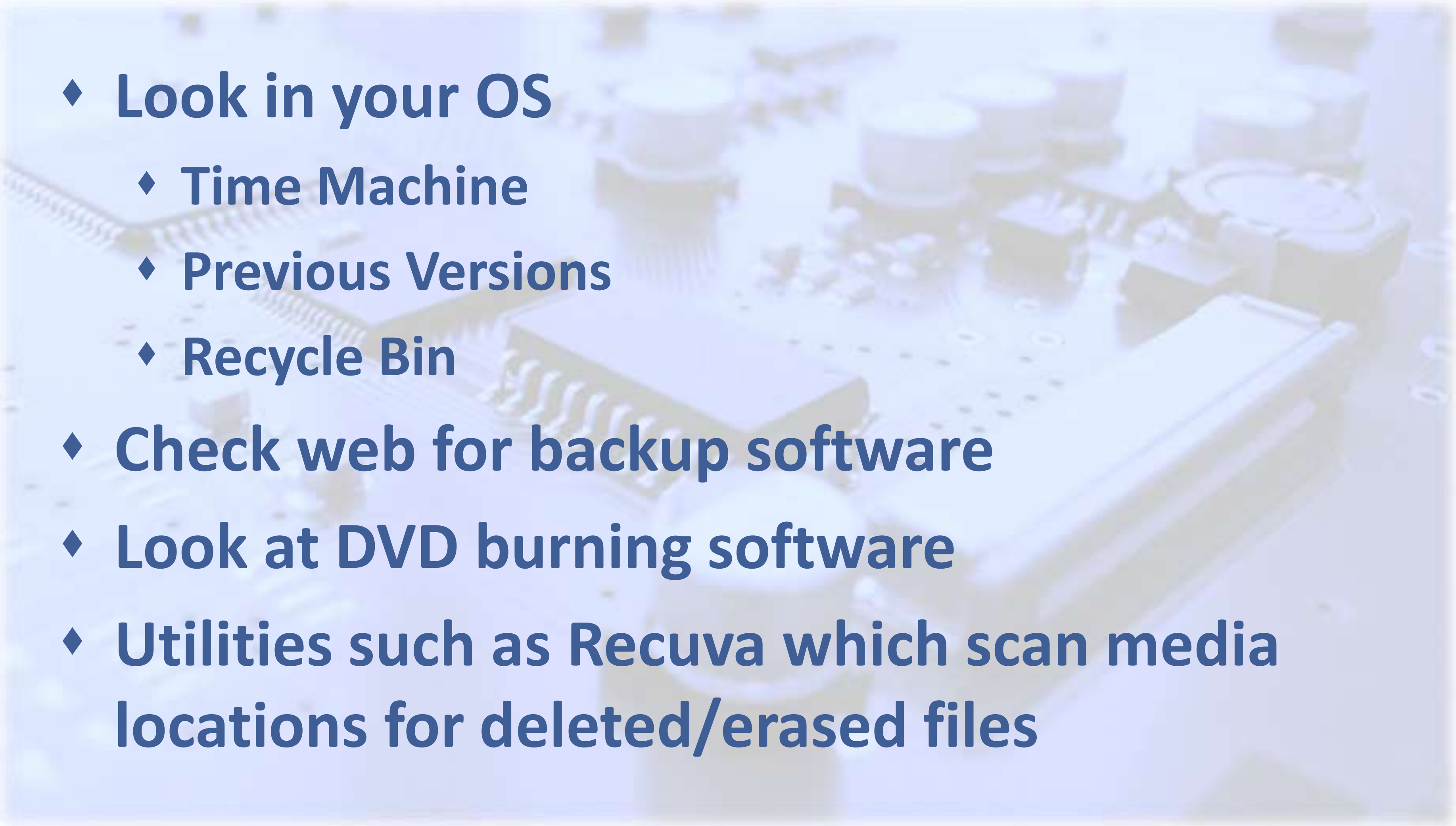


- Single Point of Failure – the point where your options fail to help you realize your intended goal(s).
- If you cannot afford to lose ALL of your data, then you MUST be utilizing ‘Off Site Storage’
- Disasters and thieves do not discriminate in what they destroy or remove. Backups in the same room as the computer are useless in these events.

What should I do?

1. Start with a full system backup to external media and put it in a safe place
2. Make a list of a data and the locations to better pinpoint future backups if a ‘full’ is not always needed.
3. Determine a schedule to back up data

Software



- Look in your OS
  - Time Machine
  - Previous Versions
  - Recycle Bin
- Check web for backup software
- Look at DVD burning software
- Utilities such as Recuva which scan media locations for deleted/erased files

Off-Site Storage Options

- Backup to external media (CD, DVD, Tape, USB Hard Drive) and store in safe location
- Use online backup solutions such as Mozy, Carbonite, Acronis, Amazon S3, etc.
- Service providers such as Iron Mountain

A car is NOT an ‘off-site storage’ location unless it’s for your own personal data nobody else cares about.

What Does Rob do?

- Combination of Continuous Backup and Removable Media
- One USB drive used as consolidated removable media backup on a periodic basis for each system including file server
- Each system is periodically backed up to file server
- File server runs continuous backup software that backs data up to account online.

Why Does Rob Do That?

- Rob is lazy and does not want to switch around tapes and drives or store them in special places
- Rob is cheap and does not want to buy tapes and drives at $50+ each.
- Rob wants the ability to restore all his data in the event of a ‘Catastrophic Loss’
- Rob minimizes risk by forcing copies of critical data when necessary

Rob’s Costs

- 1TB USB hard drive for removable media ($100 value—was a gift)
- “Server” with 500TB space – reused system with reused drives: free
- Carbonite: $50/yr
- Scope: Data from 4 users, 6 computers, with ability to recover key data within hours from anywhere that has an internet connection. All other data can throttle in the background.

Let’s take a look

- Using a tool such as Recuva
- Using Windows 7 features
- Options for Linux
- Options for Mac

Bibliography 1

- http://en.wikipedia.org/wiki/Backup
- http://en.wikipedia.org/wiki/Disaster_Recovery
- http://en.wikipedia.org/wiki/List_of_backup_software
- http://en.wikipedia.org/wiki/List_of_online_backup_services