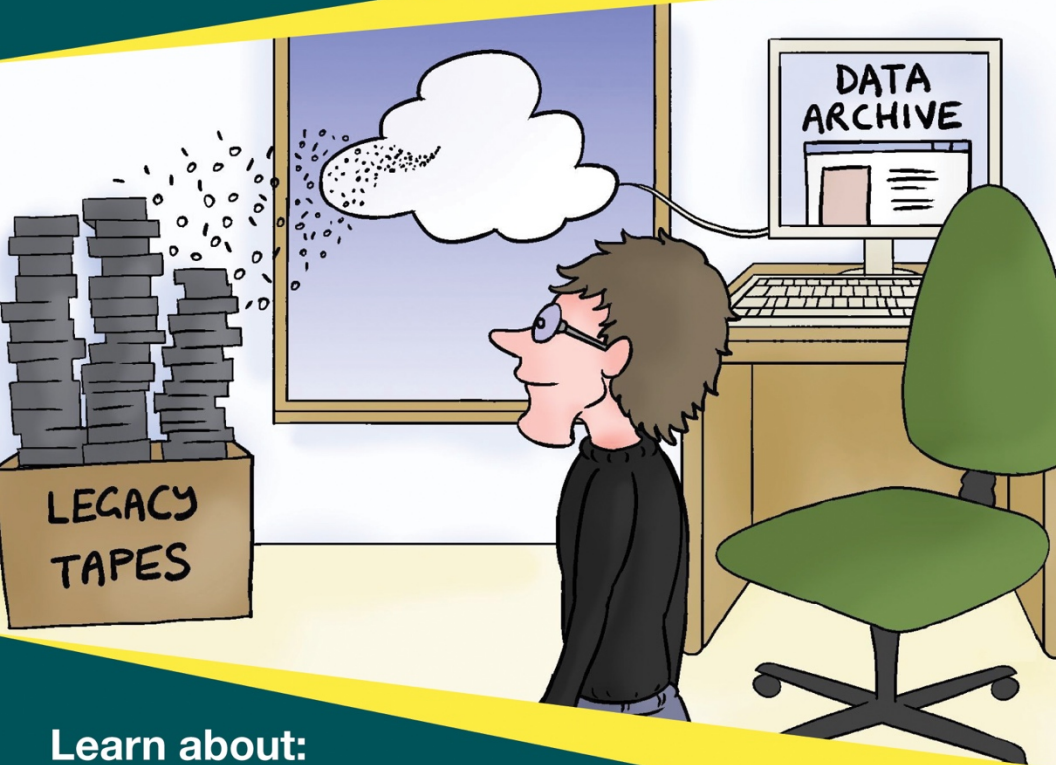


Conversational Tape Transformation



Sponsored by  TDS
TECHNOLOGY DATA SOLUTIONS



Learn about:

- The history of magnetic tape data storage and its changing role in enterprises
- The modern difficulties of managing tapes and their archived information
- The value of transforming tape archives into a valuable asset

By **Dustin D. Cook** (IT Pro, Author, Geek)

Sponsored by Trusted Data Solutions

For more than two decades, Trusted Data Solutions (TDS), the foremost expert in legacy data, tape, email and voice, has set the standard in compliantly transforming the management and accessibility of legacy data and electronically stored information alike.

As the preferred choice for corporations, regulated institutions, eDiscovery specialists, government agencies and law firms that require an expert, trusted partner for their compliant data transformation initiatives, TDS's industry leadership is demonstrable in their commitment to advancing their services and operations to support the demands of their growing, global customers and partners – with the most recent advancements being its Voice Compliance Practice, which include the delivery of voice technology migration, implementation, and end-to-end system support, making them the one-stop-shop for organizations requiring an all-inclusive voice managed service.



www.trusteddata.com

Conversational Tape Transformation

By Dustin Cook

© 2018 Conversational Geek



Conversational Tape Transformation

Published by Conversational Geek Inc.

www.conversationalgeek.com

All rights reserved. No part of this book shall be reproduced, stored in a retrieval system, or transmitted by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher. No patent liability is assumed with respect to the use of the information contained herein. Although every precaution has been taken in the preparation of this book, the publisher and author assume no responsibility for errors or omissions. Nor is any liability assumed for damages resulting from the use of the information contained herein.

Trademarks

Conversational Geek, the Conversational Geek logo and J. the Geek are trademarks of Conversational Geek. All terms mentioned in this book that are known to be trademarks or service marks have been appropriately capitalized. We cannot attest to the accuracy of this information. Use of a term in this book should not be regarded as affecting the validity of any trademark or service mark.

Warning and Disclaimer

Every effort has been made to make this book as complete and as accurate as possible, but no warranty or fitness is implied. The information provided is on an “as is” basis. The author and the publisher shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this book or programs accompanying it.

Additional Information

For general information on our other products and services, or how to create a custom Conversational Geek book for your business or organization, please visit our website at ConversationalGeek.com

Publisher Acknowledgments

All of the folks responsible for the creation of this guide:

Author: Dustin Cook

Project Editor: Nick Cavalancia

Copy Editor: Steven Zimmerman

Content Reviewer: J. Peter Bruzzese

Note from the Author

Businesses generate data. Lots of it. Some of that data is stored in filing cabinets and boxes. Some of that data is stored on live servers, whether on-premises or in the cloud. Some of that data is likely on your employees' hard drives. But, in the end, almost all of it gets stored on a tape somewhere.

Once upon a time, these tapes were used to backup data and restore it in the event of an accidental file deletion or, heavens forbid, a genuine disaster. Today, though, your backups go to disks in a data center, and your restores are all on-the-fly from secondary "recycle bins," near-line database copies, or similar sources.

But what about all those tapes? You might still use them as a point-in-time snapshot of your data. Perhaps you store quarterly and annual backups off-site. What are these tapes doing for you? How easy would it be to access data from a tape you stored three months ago? Three years ago? Three decades ago?

I don't set out to give you the perfect solution to managing your archives, but I think the story of Lawrence, which I'm going to tell you in these few pages, will give you some good ideas and hopefully help you walk away able to have a basic conversation about archive data management. I hope you enjoy the tale.

Dustin D. Cook



The “Conversational” Method

We have two objectives when we create a “Conversational” book: First, to make sure it’s written in a conversational tone so that it’s fun and easy to read. Second, to make sure you, the reader, can immediately take what you read and include it into your own conversations (personal or business-focused) with confidence.

These books are meant to increase your understanding of the subject. Terminology, conceptual ideas, trends in the market, and even fringe subject matter are brought together to ensure you can engage your customer, team, co-worker, friend and even the know-it-all Best Buy geek on a level playing field.

“Geek in the Mirror” Boxes

We infuse humor into our books through both cartoons and light banter from the author. When you see one of these boxes it’s the author stepping outside the dialog to speak directly to you. It might be an anecdote, it might be a personal experience or gut reaction and analysis, it might just be a sarcastic quip, but these “geek in the mirror” boxes are not to be skipped.



Greetings! I am Dustin’s uber-geek. I mostly come out at night... mostly. I love movie references. See if you can figure out the titles I’ve slipped into the book!

What Is Tape Transformation?



Odds are quite high that you or your customers have dozens of old backup tapes with quarterly or annual backups on them. They're probably in a managed vault somewhere, ready to be recalled when needed. But do you know exactly what you are recalling?

Those tapes are easy to forget, except when paying the vault bill. But what happens when you need an original contract, emails related to a lawsuit, an Adobe Illustrator file with an old logo for a client, or even blueprints for a roller coaster you built in the 90's? You might say, "I'll just recall the tapes and restore the data," but do you know which tapes to restore? Do you even still have the hardware and software required to restore them?

Tape transformation is taking your existing mix-and-match of uncatalogued tapes, most certainly using different technologies over the years, and transforming that into a

solution that allows you to quickly retrieve any data in almost any format from any tape technology.

Unless you have meticulously maintained legacy infrastructure and vast quantities of catalog data for your tapes, you've already lost the battle. *But you can still win the war!* Read on to find out how you can potentially save your company millions of dollars by reducing eDiscovery costs, gaining access to information in proprietary formats, and eliminating the need to maintain legacy tape hardware.

The Evolution of Tape in the Enterprise

Magnetic tape data storage has a history almost as long as computers themselves. The technology debuted for digital data storage in 1951 on the Eckert-Mauchly UNIVAC I. Back then, it was the primary data storage and retrieval device, though not quite as fast as your solid-state drive today.



Fun fact: the UNISERVO tape drive could sequentially read from tape at 7.2 kBps. And I thought my old modem was slow!

Tapes continued to be the main method of storing and accessing data for about 20 years. IBM developed the first hard disk drive in 1953, but they were incredibly expensive, the size of a washing machine, and capable of storing less data than their reel-based counterparts. They were only used when real-time data access was critical.

Eventually, around 1970, hard disk drives replaced tapes as the auxiliary storage mechanism for mainframes, and tapes took on a new role: *nightly backups of critical data*. Almost everyone who has worked in IT for more than a few years is familiar with

this aspect of the technology; find the critical files, databases, and user data, create a backup definition, generate a schedule, *et voila* you have a viable tape backup solution.

As datasets grew and information spread across multiple platforms, including the cloud, tapes stopped being used for basic backup and restore. Hard disk drives, cheap as they were, took over for nightly backups, and tapes became relegated to disaster recovery. You could get a tape library in your data center that could backup everything to multiple cartridges. Basic restores would come from a disk. Full server recovery would come from a tape.

Today, tapes are mainly used to archive data. Tape has an incredibly long shelf-life, can be stored securely in an “unhackable” offline and encrypted state, and doesn’t require anything more than basic air conditioning and protection from sunlight to keep it serviceable for decades. It is the perfect medium for archive data.

Yes, servers are still backed-up to tape (though now it's typically multiple servers per tape, as their data density steadily increases past 10 TB), but it isn't so you can restore it in a disaster; it's so you can keep a point-in-time snapshot of your data.

Understanding Archives

If you are an IT professional reading this, you know exactly what an archive is. *It's a collection of data from the past that you store in case someone needs it, right?*

The trouble with IT is that we see things in zeroes and ones all too often. Data is just a collection of them, after all. But to the legal department, it is a signed contract that was thought lost or an email proving intent in a negotiation. To human resources, it's the evidence they need to fire someone for corporate espionage. To an architect, it's a blueprint for a roller

coaster in Japan that will save time and money in building its twin in North Dakota.

The point I'm trying to make is that archive data is still **usable information** to someone. Guaranteeing that data can be found and retrieved can mean the difference between your company being a hugely profitable industry leader or just another competitor in the field.



This may sound like a truism, but all information is stored for a reason. Just because it's old doesn't mean that reason isn't still relevant. Truly understanding the importance of the information your employees or customers need can help you build a good and valuable reputation.

Now that you are familiar the value of archives, and with the basic history of magnetic tape data storage, I want to emphasize just how painful a disjointed tape solution can be. I'll tell you the semi-fictional story of how one company, Medium Enterprise, Inc., and their vice president of information technology, Dr. Lawrence Magnus, learns about tape transformation the hard way.

Dr. Magnus, or How I Learned to Stop Worrying and Love the Tape Transformation

Dr. Lawrence Magnus, Larry for short, has been in the information technology industry for 25 years, and he has seen all manner of products and technologies come and go. If you stood around the water cooler with him, you might hear a story of that time he was sent to a client site in the late 90's to fix their backups that were running on a Zip drive. Or you could hear a riveting tale from 2009 of the junior administrator that

deleted an entire Exchange Server organization (and Larry had to clean it up, of course).

Today, Dr. Magnus is the vice president of information technology for Medium Enterprise, Inc. (MEI), and things are running smoother than ever; Sales have the technology they need to chase leads and secure deals, Accounting and Finance have software that interfaces with their banks in real time, Human Resources have easy tracking of employee performance and time worked – everything is great.

Then Legal called. Apparently, MEI is involved in a criminal negligence case, and Legal needs some data from 2009 to defend the company. “Well, this isn’t a big deal,” Lawrence thought. “I’ll just have a backup operator pull the tapes from year-end 2009 and restore the data.” Little did he know that this would be one of the greatest challenges of his career with millions of dollars and his reputation at stake.



This is a reasonably common scenario, though I hope you never encounter it. I have personally processed over 30 litigation holds and facilitated dozens of eDiscovery requests over the last seven years.

The Tapes of Wrath

Legal wanted all the email of four different employees involved in contract negotiations, two months of call logs and voicemails, and two directories from their file server (preferably from multiple periods to show the evolution of the documents within). This sounded like it would be a painful day for the backup team, but what Larry didn’t immediately think of is that there have been three major platform changes in MEI since 2009.

When the backup operator phoned his desk later that afternoon, he was happy to pick up the phone thinking that all was done. “Hey, Lisa. What can I do for you?” asked Larry.

“I hate to say it, but I can’t restore this data. We don’t have the tape drives we need anymore and, even if we did, I don’t have a copy of the backup software we were using at the time, or even a physical server to run it on!” said Lisa.

Larry was stunned. “Well, don’t we have something like that in storage?” **Spoiler alert:** *they did not.*

Stalling for time, Larry turned back to Legal to ask how long they would have to fulfill the request. It turns out, he had two months to turn this around, and that made his stomach drop. *What am I going to do, thought Larry. Can I get one of the VS1 tape drives on eBay? How do I P.O. that?*

The search was on.



Remember how I said this story was “semi-fictional?” Well, this is a minor modification to an actual scenario I faced several years ago. The process was a nightmare, and I wish I had known about tape transformation at the time.

Lawrence of Archivia

First, Larry called Lisa back and asked her to put together a list of all the tapes in the date range Legal wanted. He would prioritize the emails and the final copies of documents first, followed by figuring out how to get the call logs and voicemails. If time and tape permitted, they would restore older copies of the documents to track their evolution.

It turns out they had over 100 tapes in two different formats. Most of them were in their older backup system that used DLT- VS1 tapes, but the last two dozen were LTO-4 tapes. And, worst of all, they had changed backup software at the same time. Larry was now looking to purchase two tape drives, a server, and the necessary hardware to connect them together. Plus, they would need to configure two different backup software packages to retrieve the data.



What physical tape formats can you remember? Before the Linear Tape Open Consortium, there were at least eight competing formats. Imagine having to track down drives for each of them!

Even worse, he remembered that in 2009, MEI was using an old phone system that ran on MS-DOS and had a proprietary audio format! They had only migrated one year of call data (at Legal's request, no less) to the new system in 2011. Larry wasn't sure if the company that made it was still in business, and he sincerely doubted they kept both the hardware and software available to restore that data. *Would he need to reverse engineer the audio format himself?*

Explaining all of this to Finance for why he just requested \$50,000 for an emergency build-out of servers, tape drives, and software was difficult, too. "Haven't we moved all of that to the cloud? Why can't they restore it? You mean you migrated us to new technology without thinking of what to do with the old data?"

Never mind that it was a C-level decision to leave older data behind. Apparently, he was now the "guy that forgot the archives." He had become Lawrence of Archivia and, at this point, he almost wished he could disappear into a desert.

Lisa's Choice

Lisa was panicking, too. She was dreading having to sit and catalog 100+ tapes, figure out if each has the data they need, and then get it all to Larry for delivery to Legal. This was going to be a boring, time-consuming process, and she knew there had to be an easier way. *If you could contract out desktop support, why couldn't you contract out data restoration?*

But that could jeopardize her own job. *If they outsourced restoration, why couldn't they outsource backups, as well?* The data center companies would surely love to charge them to handle tape swaps, vaulting, and monitoring, and one of the systems administrators could easily handle test restoration and any incoming alerts.

Lisa decided to go ahead with the research while she waited on Dr. Magnus to secure the necessary funding and equipment for the project. It wouldn't hurt to look, and she could safely talk about it to Larry if she found anything.

What she found would change MEI's IT operations forever.

Tapeset Blvd.

Lisa found a few companies offering full-service vaulting, cataloging, and restoration of tapes. She would be able to take the daily tapes and send them off-site as before, but now MEI Legal could search those catalogs and restore data on their own through the company's portal.

Best of all, they didn't limit submission to one tape format; she could ship the company their entire tape archive, from Travan, to VS1, and even their new IBM TS format. For the really old tapes that were missing catalog data, they could optionally perform that service, as well.

This all sounded great, in theory, but she wanted to take it to Larry first to make sure she wouldn't immediately get made

redundant if they bought the service. She trusted him, and he always looked out for his employees.

Larry was stunned. He wished he had thought to look for something like this earlier. "I guess I was too panicked by your phone call to think straight," he said. "I'm glad you found this. And don't worry, I'll make sure you aren't made redundant. Give me a few days to check this out."

Lisa went home that night feeling confident she had made the right choice, and proud that she had found such a viable solution.

The Tapefather

Lawrence spent the rest of the day doing research on these companies and their service offerings. He identified three main objectives that each provider sought to complete.

The first objective was asset management. These companies could provide a full asset report of tapes including their format, cartridge type, date of receipt, and identification code. If Larry provided backup dates that matched the codes, they could track that, as well. This wasn't any different from what his existing vault provider offered, so Larry moved on to the next objective.

Second, these companies offered data management. Whereas asset management tracks the physical cartridge, data management tracks the logical information stored on that cartridge. If Larry provided catalog information, it would be stored in their systems with the tape's physical information. If he couldn't provide the catalogs, these companies could create them for an extra fee, and it didn't matter which backup software was used to write to the tapes!



In my personal experience, tape catalogs are one of those things people completely forget to backup. If you're not already doing it, start today!

This impressed Larry greatly, and he was already thinking he could move their vault provider to one of these companies just for the data management piece. Though, what truly stunned him was the data access objective. Each company offered rapid access to the data on those tapes without having to ship them back to MEI for restoration. Data could be restored to a secure repository, whether in the cloud or a physical, encrypted disk that could then be made accessible or shipped to MEI.

One of the companies even had a special service to extract legacy audio data from proprietary phone logs! This was even more than Larry thought possible given the source of that data.

Raiders of the Lost Archive

Larry called all of the companies, got quotes and information, built a detailed presentation, and scheduled a meeting with both the CTO and Lisa. Larry would introduce her to the CTO as their “senior recovery expert” and suggest she be made the lead of this project.

The CTO loved the presentation and saw the cost savings that could be had. In addition, Lisa made quite the impression and was given the project.

In the end, Larry was able to provide all of the information Legal had asked for (on time, I should add). Lisa was promoted to senior archive data manager and made the point person for all interactions with the tape transformation company. The CTO was able to take credit for saving thousands of dollars a

year on eDiscovery costs. Legal even successfully defended the company from the multi-million-dollar criminal negligence case, mainly due to a voicemail that was recovered.

Everyone was able to slowly forget the event thanks to how smooth their tape transformation had gone, and they all lived happily ever after.



Had his team not discovered a solution, MEI could have been out millions in damages, and someone innocent could have gone to jail!

The *real* story didn't end with smiles, but that's a tale for another time.

Achieving Total Tape Transformation

Your enterprise may be in a similar situation to Medium Enterprise, Inc. You probably have hundreds, if not thousands, of archive tapes in different formats, written by different backup software, and holding disparate data formats. Do you have the equipment to access it? How about the backup software?

For an enterprise to achieve total tape transformation, they must meet the same objectives as Larry and his tape transformation vendor.

You must store your archive tapes in an off-site facility with proper security and safety measures in place. That facility must provide asset management of those tapes by tracking all of their physical characteristics, such as cartridge type, tape format, date of backup, identification number, and date of receipt. You likely have this now with a vault provider; several exist all across the world which provide this bare-minimum level of service for very little money.

You must also maintain, whether internally or through a third-party provider, a full set of catalog data for every tape in the archive regardless of age, technology, or software used. This data should be readily available to be searched using a web interface by anyone to whom you provide secure, individual access. This would typically include your legal department, relevant individuals from your information technology department, and possibly representatives from Human Resources or third-party counsel.

Finally, you must ensure on-time and secure delivery of that data to the individuals who request it. Whether the request is fulfilled using internal resources, such as legacy tape backup equipment maintained for such uses, or using a third-party provider, these requests must be tracked and reported-on.

Once you have created or requisitioned such a system, restoring archive data should be as easy as a person logging into a web portal, searching for their content (whether emails, files, drawings, call logs, or anything else), selecting the dates to restore, and then requesting the data.

If you have not reached this level of service, you have not achieved total tape transformation.



The formality of this section irks me. Here's a joke to lighten it up: You heard of that new band 1,023 MB? They're good, but they haven't got a gig yet.

The Value Proposition

I'm sure you're thinking, "this sounds great and all, but that just sounds like I'm spending more money for something we'll rarely use." And that's true, to an extent.

There are lots of things people spend money on that are rarely used or needed, such as fire extinguishers, car insurance, and bullet-proof vests. A police officer wouldn't want to go to arrest a criminal without a bullet-proof vest, even though the likelihood of them getting shot is fairly low. Neither would you want to drive around in your brand-new Mercedes Benz without car insurance.

But when you *do* need it, you are incredibly thankful it's there. The same goes for achieving tape transformation. Your business may be sued once in a blue moon. Or you may need to reference an old architectural drawing twice per century. *But are you absolutely certain your existing archive system is capable of providing the data necessary to fulfill those requests?* Will you need to be like Lawrence and worry about buying a legacy tape drive on eBay?

Peace of mind is a great value proposition in itself, but potentially saving thousands of dollars on eDiscovery (or even millions of dollars building a roller coaster wrong because you lost the drawings for its twin in Japan) is worth a whole lot more.

Plus, if you have been holding onto those legacy tape systems, you could finally take them offline, saving costs in maintenance contracts, leases, electricity, and labor to keep them running.

The Big Takeaways

Tape transformation is about taking your offline, offsite archive data and making it searchable and restorable with confidence and speed.

There are a variety of options available from different vendors. Make sure you choose one that fits your needs. For instance, are you a global enterprise with data centers across the world? Make sure your vendor has facilities in locations that match your needs.

When researching a provider, check for things like a defensible legal chain of custody, certification of security such as PCI compliance and a SOC report. How are their logistics? Do they offer predictable or fixed costs?

Some providers will offer dedicated project managers to help ease your transformation initiative from soup to nuts. This is critical to keeping deliverables on-time and on-budget during the project.

Ultimately, achieving tape transformation should be a mostly painless process and, if you do it now, when you're *not* struggling to restore data from almost a decade ago, you can ensure you won't have any sleepless nights, like Lawrence, after a call from Legal.



I hope you have enjoyed learning about tape transformation from me. And I also sincerely hope that you didn't groan *too* hard at my bad movie puns and jokes. Thanks for reading!

Vendor Sponsor Chapter – Trusted Data Solutions



“Have you seen our copy of Cheyenne Arcserve 6.5 for NetWare from 2002?”

Imagine your company has *1.5 million* tapes housing data that spans decades. Nestled deep within those tapes is some really important data that will be useful for Production, Operations, Legal, HR, etc. Some of it needs to be kept because the government says so, some of it is needed as a historical record, and some simply has value for a longer period of time. The trick here is to *preserve what you need and chuck the rest of it*, right?

No one really *wants* to manage all those tapes – it’s the *data* inside of them that’s desirable.

This was a real-world use case faced by a global company in the financial services sector. On top of simply trying to address the massive amount of data stored on tape, one of the other challenges was the fact that so much of the tape estate was created using old hardware and software that no longer exists.

Even so, organizations like this have a desire to retrieve the data for one or more of the following three reasons:

- **They have to** – In short, because the government makes you; compliance mandates and regulations with retention requirements make both archiving *and* retrieval necessary.
- **They need to** – Some organizations are involved in lots of litigation where retrieval is necessary and common to the business process.
- **They want to** – Many organizations amass a ton of valuable data over the years: software compiler libraries, seismic data, prior art, intellectual property, etc. It was valuable then and may still be of value today.

This is common among organizations today – you have lots of old data collected over the years, using solutions and systems that either no longer exist, or *will* no longer exist due to a consolidation of data centers, sites, etc., and you now want to make it accessible or useful to the organization.

Enter in Trusted Data Solutions.

Trusted Data Solutions (TDS) helps organizations access and retrieve data across different technologies. They specialize in accessing data as an *archival asset* – it's not like restoring complete OS; they have tools and proprietary technologies used to read, catalog, restore, and extract the desired data – *all done in the cloud.*

In short, TDS turns data retrieval off-of-tape into a managed service.

Their primary mission is to alleviate IT teams of the burden of accessing and managing the tape-based estates of data. They help organizations figure out what's on the tape estates, and to make defensible decisions around whether to remediate the data or to destroy the tapes.



TDS has used their 25+ years of experience to perform over 40,000 restoration projects for everything from high-profile government to small and large corporate IT.

So, when should you go through a tape transformation and engage TDS?

Tape Archives... Transform!

Organizations wishing to cut ties with legacy environments while providing ongoing access and retrieval to legacy data are perfect candidates for tape transformation.

See if the following fits your organization:

- 1) You have a material investment in tape backup environments and platforms.
- 2) Your organization is either going tapeless or is looking to consolidate data centers – in either case, you're looking to eliminate backup hardware in the process, which means you're going to need a way to access that data moving forward.
- 3) You desire to access to all that data on an archival basis.
- 4) You want data retrieved for *business* purposes, and not as part of disaster recovery.

- 5) You want to partner with a provider to take on the responsibility for management and retrieval of all tape estates, the necessary infrastructure, data center, etc.

If this sounds like your organization, tape transformation is probably in your future.

What Does a Tape Transformation Look Like?

Instead of you needing to rebuild the infrastructure and the tape environment, to create servers to which you will restore, etc., TDS simplifies the process to transform your tape estate and get the data back. It's really straight-forward:

- 1) You ship TDS your tapes.
- 2) They build and maintain a catalog of the data on tape (even those really old ones that no one knows which software they were even created with)!
- 3) Based on your need, data is retrieved either to generate an archive, or on a per-data request basis
- 4) You get the data back as the deliverable

It's that simple.

Their Restoration Assurance Program is a fully-managed service that maintains your legacy catalog while providing on-demand restoration and optional tape vaulting, if desired.

TDS have the expertise and processes around finding the data and restoring it, regardless of the specific tape, format, or original backup software used. Plus, their catalog and recovery methods provide a higher level of accuracy and speed than IT can deliver.

TDS' customers range from SMBs and mid-market enterprises all the way up to global financial institutions with tape estates

spanning 7 countries (where the transformed data must reside in those countries). They help organizations in every industry vertical, including Pharma, Financial, Utilities, Insurance, Healthcare, and more.

Simplifying Tape Archival and Retrieval with TDS

IT is in the business of protecting operations with backups, a DR strategy, etc. But IT *isn't* in the business of maintaining an ability to recover data from a tape backup created 10 years ago using hardware you've never even seen. And, even if you could recover that data, it would take you longer to build the recovery environment than to do the actual restore.

For organizations where the data on tape has value to the business for compliance, legal, or operational reasons, utilizing a partner that specializes in the impossible task of cataloging and retrieving data from tape archives makes sense.

By leveraging Trusted Data Solutions, you can offload the staffing, hardware, software, and time needed to properly recover archived data – reducing the cost of doing so, while improving the speed and accuracy of retrieval.

NOTES



HOW ARE YOU MANAGING YOUR MOST VALUABLE BUSINESS ASSET?

Data is any business's most valuable asset—and how you defend it is as critical as how you access it. In today's increasingly regulated environment, ensuring your organization implements a data management strategy is more critical than ever. For more than two decades, Trusted Data Solutions has led the market in delivering the most effective path for an organization's critical data.

Register Now To Find Out
How To Transform Your Data!

info@trusteddata.com | [trusteddata.com](https://www.trusteddata.com)

Easily “converse” about tape transformation in any setting

Magnetic tape data storage has been a staple of modern business since the 1950's, and your business probably has hundreds, if not thousands, of archive tapes in storage. The goal of this book is to help you learn the basics of how to transform those archive tapes into easily-retrievable information for your business, regardless of what tape format or backup software was in use at the time.



About Dustin D. Cook

Dustin has worked in a variety of technology environments for over 20 years. He is an Exchange Server and Office 365 guru, a bird photographer, and a lover of puns.

Follow him on Twitter @Avianographer



ConversationalGeek®

Visit conversationalgeek.com for more books on topics geeks love.