Costing a PST Elimination Project

Executive Summary

This whitepaper was written to highlight the various options in creating and managing a PST Elimination Project. It compares two styles of IT controlled projects, a project requiring heavy user involvement and one using C2C's PST Enterprise solution.

Scenario

A 10,000 user organization wants to migrate PST data and prohibit the use of PSTs going forward.

Background

The company wants rid of PSTs due to the overall risk of data held in them, but other factors include:

- Time taken by IT to fix user problems
- Disruption they cause to users
- Opportunity to import them into Exchange 2010
- A need to consolidate / reduce storage
- Compliance requirements
- Litigation risks
- Corporate retention policy
- Part of archive implementation

The Company

A 10,000 user organization comprising of 9,000 desktops/laptops on premise and 1,000 laptops of salespeople/remote workers who only come to an office about once per week. Staff turnover at 12% (company's average around 12-15%). The company has policy of deleting email > 6 years old.

Assumptions on PST usage and other costs in the Company:

- 25,000 PSTs for current employees
- 10,000 PSTs from former employees
- Average PST size = 1GB
- Total size of PSTs > 35TB

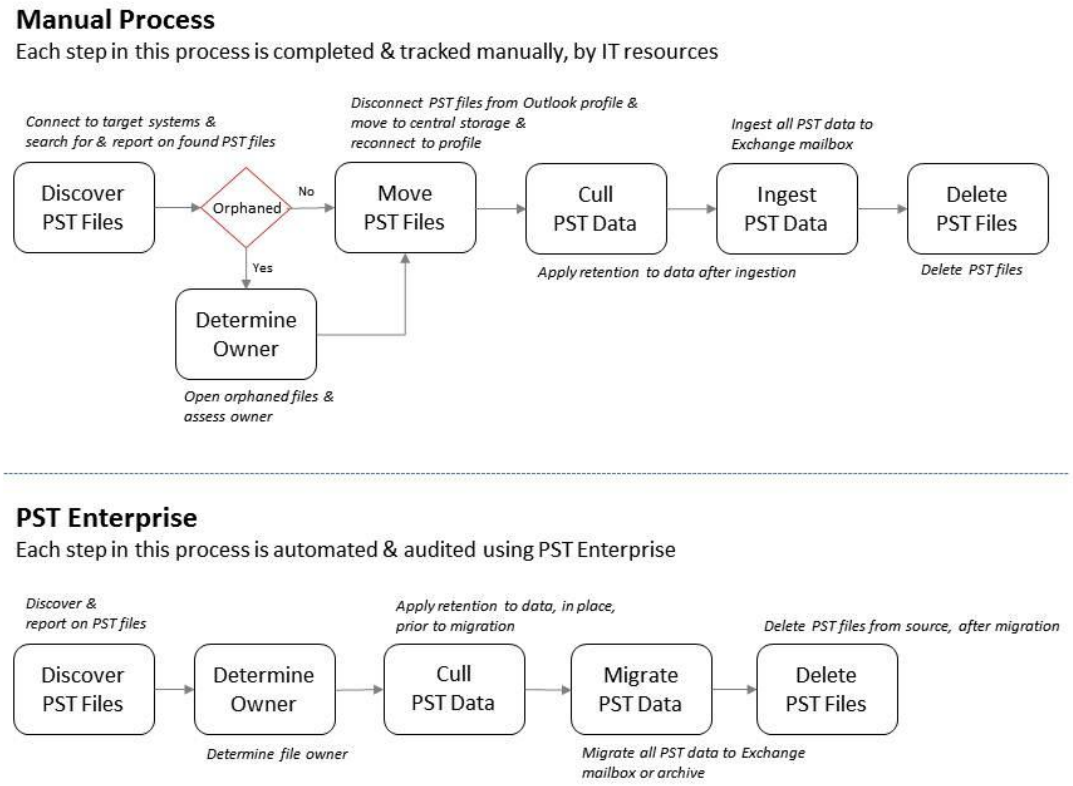
Of these:

- 11,000 PSTs are on desktops/laptops (total size = 11TB)
- 5,000 PSTs are orphaned and have no apparent owner
- 20,400 are on intended PST file storage
- 3,600 are scattered on other storage
- 12.5TB is old and past retention requirements
- 200 servers in the organization (total server count)

Storage costs:

- Primary (capex $5/GB, opex $8/GB)
- Secondary (capex $3/GB, opex $5/GB)
- IT admin is paid $478 per day (loaded), equates to $110k pa (= $64 per hour)
- Average employee is paid $348 per day (loaded) equates to $80k pa (= $46 per hour)

General Workflow of PST Elimination Project for a 10,000 user company



The project

The elimination project is envisioned to have the following phases:

1. Project Planning
2. Find PST, move from remote locations to central location
3. Find PSTs on file servers, move to central location
4. Resolve unassociated PSTs
5. Cull non-relevant data (if possible)
6. Ingest into Exchange 2010 / Archive

For each of these there are:

- Labor costs of IT
- Productivity costs to affected employees
- Capex costs (storage / bandwidth)
- Timescale and risks associated with not being able to find data

Phase 1 - Project Planning

For the manual processes, there are no easy ways of understanding the scale or scope of the problem. Apart from sampling a few PC's, the only way to do this is to visit PC's either manually or electronically and start the task at hand. Considerable work will be required in planning which PC's to address, how and where to copy data and what to do with existing PSTs if users are in need of them. Plans will need to be revised along the way, based upon practical experiences.

With PST Enterprise, PST data can be easily gathered (in background) and will give a full understanding of how much data there is, where it is located and which PSTs are orphaned. This will enable far better planning of the task at hand.

Phase 2

There are four options:

a) Manual Process/Manual Find

The IT Admin physically visits every desktop/laptop and carries out a manual search for PSTs. This is hugely time consuming and interrupts computer owners as they will not be able to use their computers while this is happening, reducing their productivity. Estimate: 12 minutes per computer to interrupt, scan, reconfigure and copy files. The business user needs to be present and logged on to their PC/laptop for the search to occur. Anyone out-of-the-office would require another visit. The IT admin(s) will be consumed full time for as long as it takes to visit and scan all PCs.

Scan 5 computers per hour, 6 hours of productivity per day = 30 per day. (Includes local visiting in building, documenting and recording results, other management time, visiting remote locations is not considered).

For users who are not present, calculate an additional visit because it will take time to figure out they are away, when they will be back, and arrange a new visit. 20% need to be rescheduled (holiday, sick, out of office, not convenient, employee not present, etc.) Number of desktop visits = 12,000

12000 / 30 = 400 days = $191,200

Lost productivity suffered by the company. Assumes average worker is paid as above and is disturbed for 30 minutes from their work. Don't count re-visits to them as they are only affected once.

10,000 visits *30 minutes = 5,000 hours * $46 = $230,000

The migration is done in core office hours, impacts users, network and servers.

b) Manual Process/Electronic Find

For the IT Admin to log-on to the desktop/laptop electronically and search from their office.

There are plenty of packages to enable this. Some customers' systems will require the user to accept the remote log-in. Estimate 10 minutes per computer to interrupt/scan/reconfigure/copy files, but the level of interruption is less than option a). The computer will need to be switched on and attached to the network, but since the user does not need to be present, any time in the working day is realistic. If the user is present (as is likely) they will see what is going on, so it will disrupt them, possibly reducing productivity by 50%. The IT admin will be consumed full time for as long as it takes to scan all PCs, though he will not need to move from his desk.

Scan 6 per hour, 6.5 hours of productivity per day = 39 per day. (Including documenting results and other management time).

For users who are not present, calculate an additional 'visit' because it will take time to figure out that they are away, when they will be back, and arrange a new visit.
20% need to be rescheduled (holiday, sick, out of office, not convenient, salesperson not present, etc.) so number of desktop visits = 12,000.

12,000 / 39 = 308 days = $147,224.

Lost productivity suffered by the company (at 50% because they can use their PC, but they will be distracted by seeing activity on their screen).

Productivity loss for 30 minutes of total interruption = $115,000.

The migration is done in office hours, impacts users, network and servers.

c) User Driven Process

This requires the user to identify PSTs, make decisions on what data and which PSTs to retain, and then to initiate the upload to a server. It might appear to save IT time, but it is fraught with problems and prone to error.

Instruct users to scan their PCs for PST files. Give them written instructions about deleting old email, other non-relevant email, personal emails and adhering to corporate policy.

User Driven Process

i. Estimate 2 hours per user to scan their PSTs and carry out actions as required. 20,000 user hours ($920,000)
ii. Estimate 1 in 4 users will initiate a help-desk call for further explanation (15 minutes user time plus cost of help desk). 2,500 * 15 minutes (= 750 user hours) + 2500 help desk calls @ $25 per call ($97,000)
iii. Estimate 1 in 5 users will ignore the requests of IT, requiring more emails/phone calls to move forward, taking 15 minutes of admin time. (2,000 * 15 minutes) = 500 IT admin hours in chasing users ($32,000)
iv. Estimate 1 in 12 users will make enough of a mess of this that it will require a visit from an IT admin to resolve what is happening and fix it, taking 1 hour of admin time. Does not include any travelling time. 830 hours of admin time + 830 hours of user time in extra user disruption ($91,300)

d) C2C Approach

Following the report gathering phase, it is easy to turn the application into the full migration tool. When ingesting PSTs, they will be moved in background and will be non-intrusive on the user. There is no limit on how many computers can be searched at any one time. This would take half a day to set-up the PST policies, a couple of hours to test the changes to the log-in script.

The results would be available a day or two later from thousands of PCs. The IT admin would be able to get on with his normal tasks after starting the C2C PST process.

Installation, familiarization and software testing is counted in Project Planning. In less than a week, the product can be understood and a project plan created. (Allow 10 days).
It can be set to delete older data, dramatically reducing the amount of data to be migrated. Lost PSTs can be automatically associated to the rightful owner. It can be set to move the PST to a given location (if desired) or ingest directly to Exchange 2010, Office 365 or to C2C's ArchiveOne.
There is no lost productivity for users.

Migration of data is done in background, so there is no impact on user performance
Cost of running the project and monitoring results = 1 day per 2,000 users. (5 days)
Total cost = 5 days = $2,390

Phase 3

Move PSTs from Servers to Central Location

PSTs will exist across many servers in the organization. This will be due to historical policies of backup/restore, changes in storage policies and users being clever enough to find locations in which they can store data. Every server will need to be searched.
All manual processes will require an IT admin to log-in to the server, browse, find, move the data or copy to a USB drive. Assuming that the time to log-in, browse, find and move is 30 minutes per server:

200 servers * 30 minutes /6.5 hour day (allow for documenting and management time) = 15.4 days

For the user driven process, the users should have moved the PSTs, but it will not be 100% reliable; orphaned PSTs will still need to be found and moved. IT Admin will need to check every server. Assume 15 minutes per server.

200 servers * 15 minutes/ 6.5 hour day = 7.7 days

With PST Enterprise, the product will need to be pointed at all servers and it will seek out and ingest the data in place. This is costed in the set-up of PST Enterprise.

Phase 4

Associating Orphaned PSTs

Each orphaned (unassociated) PST needs to be opened and examined. Based on the findings the owner can be determined. With the manual process, someone trustworthy is required to open these PSTs and examine the data. When the owner has been established, the PST needs to be re-associated with the owner.
Allow 5 minutes per PST.

Manual time taken by IT admin to establish owner of an orphaned PST = 5 minutes per PST x 5,000 orphaned PSTs = 64 days (assumes 6.5 hour productivity plus documenting results) = $30,592

With the user driven approach, there is a danger that orphaned PSTs on a desktop/laptop may not be discovered and the company may be at risk of undiscovered data. This would require considerable admin work and is not costed.

Automatically establishing ownership of PSTs can be done with PST Enterprise. It is part of the search and discover capability, and is included in the project cost of Phase 1

Phase 5

Applying Retention Criteria to Culling Data

Manual processes – this is not realistic. IT admin would need to open every PST, browse the folder hierarchy and examine all data, which is prone to errors and very time consuming.
User controlled – As part of the migration process, users could be asked to delete old/irrelevant data prior to moving their PSTs. The results are likely to be inconsistent, again prone to errors and time consuming. But for the sake of the storage calculations we assume they have deleted 50% of their old data.
PST Enterprise can be set to remove data older than a certain age, or data between two points in time. This will happen automatically in the ingestion process.

Phase 6

Ingesting into Exchange 2010, Office365 or Archive & Elimination of the PST

With the manual processes for ingesting into Exchange2010 or Office365, scripts will need to be created, tested and deployed. It is likely that these scripts will need to be run for different sets of users every few days. The amount of work will not be significant and is likely to take less than 2 days (elapsed), so has not been costed. Similarly, with eliminating the PSTs after migration.
With PST Enterprise the migration and elimination is all part of the automated process and has already been costed.

Extra Storage Requirements

This is incurred by consolidating all PSTs to a single location. Without PST Enterprise, IT Admins need to have all PSTs located in one place prior to ingestion to Exchange2010 or Office365.

Manual processes
Required storage in one location = 35TB (Total number of PSTs = 35,000)
Current server storage used = 24TB across multiple servers (20.4TB on main server, 3.6TB on other network servers).
Of the 35TB, 12TB is old and could be deleted, if there were an easy way to delete it.
The main PST server will require another 14.6TB of storage.
For the user controlled process, if they culled 50% of their old data, only 8.6TB of extra storage would be required.
Cost calculated on Capex for the 14.6TB and 6 months of Opex for the duration of the project.

With PST Enterprise, when migrating data to Exchange 2010, Office365 or C2C ArchiveOne, there are no additional storage requirements within the migration process. PST Enterprise can migrate data without needing a staging location.

	Manual Process (Manual Find) **Admin visits every desktop**	**Manual Process (Electronic Find)** **Admin logs-on to every desktop**	**Manual Process (User Controlled)** **Requires heavy user involvement**	**Using C2C PST Enterprise to find, migrate, ingest and eliminate PSTs**
Labor				
Project planning	$ 9,560	$ 9,560	$14,430	$ 4,780
Find and move (desktop to server)	$421,200	$262,224	$1,140,300	$ 2,390
Find and move (server to server)	$ 7,361	$ 7,361	$ 3,680	Included
Determine owner of orphaned PSTs	$30,592	$30,592	$30,592	Included
Culling data	Not realistic	Not realistic	Assume 50% of data is culled by user	Included
Migrating data to Exchange 2010 or Office365	Not costed (less than 4 days admin time)	Not costed (less than 4 days admin time)	Not costed (less than 4 days admin time)	Included
Capex – Extra Storage				
Extra primary storage for consolidating PSTs to single location from other servers, laptops & desktops prior to ingestion	14.6TB	14.6TB	8.6TB	Does not require consolidating PSTs to single location
Costed at $5 per GB for Capex and $8 per GB for 6 months for Opex	$131,400	$131,400	$74,100	$ 0
Total	**$ 600,113**	**$ 441,137**	**$ 1,263,102**	**$ 7,170** **+ PST Enterprise**
Impact on users	High	High	Extremely high	Low
Impact on IT	Huge	High	High	Low
Risks	High – human errors, missed data, time	High – human errors, missed data, time	High – human errors, missed data, time	Low

Appendix 1

Typical PST usage

From our experience of PST usage over many years and many customers:

- 2-3 PSTs per user (can be as high as 4-6x) – calculate on 2.5 PSTs per user
- Add staff turnover, industry averages between 12-15% – calculate on 12%
- Plan on 1GB per PST
- 30-35% of PSTs will be on laptops/desktops – calculate based on 30%
- They will be scattered across all servers (changes in backup regime, employee departure, 10-20% of server based PSTs will not be in expected storage location – calculate on 15%
- 10-30% will be orphaned (no obvious owner) – calculate on 15%
- 30-40% of PST data can be eliminated as old – calculate on 35%
- 60-70% of PST data could be eliminated as old, duplicated or not relevant (personal data)

Justification

- Headcount of Company 10 years ago = 8,000. Assume 4% headcount growth for 6 years, then flat for last 4 years = headcount today of 10,000
- Assume 12% staff turnover against increasing headcount = 10,000 former employees in 10 years.
- Assume 1 x PST of 1GB per former employee

About C2C

C2C offers automated data archiving and management for email, files and SharePoint content. With over 15 years experience delivering solutions for capacity, e-policy enforcement, compliance and e-Discovery, C2C optimizes performance, reduces storage management costs and minimizes risks associated with email – helping you to control data before it controls you.

As a Microsoft Gold Certified Partner, C2C supports organizations in the manufacturing, finance, education, healthcare and government sectors, including Fortune 1000 companies.

Established in 1992, C2C is a privately held company with offices in Reading, UK and Westborough, Massachusetts, USA.

More Information

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