

# Storage Forecaster™

## The storage forecasting challenge...

Until now, trying to calculate how much storage you use in your backup environment was an impossible task.

- How many tapes do you burn through?
- How much disk does my VTL use?
- Can my de-duplication storage withstand another legal-hold?
- How much does it cost me to run my backup environment?

## The traditional method of calculating tape and disk storage is wholly inaccurate.

Traditionally, businesses guess at how many tapes they are going to need to purchase each year for their backup environments because it's difficult to calculate how many tapes you'll burn through. For most organizations, you'll usually be sending out more tapes than you'll have returning from off-site due to lengthy data retention requirements. This means that businesses often find themselves running out of tapes and have to rush to buy more. This results in backups not occurring due to no media and missed backup windows, unable to recover data and falling out of compliance. Additionally, legal-holds can run havoc on a storage group's ability to manage storage due to the 'freezing' of data that may be required for e-discovery.

Disk based backups and VTL's are not exempt from the same challenges of calculating consumption. In fact, the financial implications of not being able to forecast your disk usage in your backup environment are substantially larger and will have a significant impact in your data center as well. When you run out of tapes, you buy more and put them into the tape library. When you run out of disk space for your VTL, not only will you need to buy more disk storage, you'll have to procure the data center space to facilitate the new storage arrays, increased HVAC, power, SAN, etc.

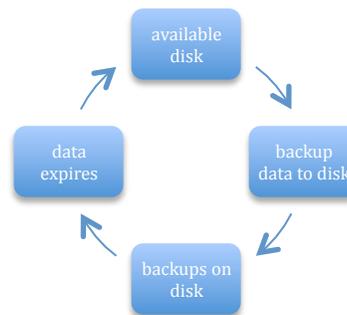
## A new, sophisticated approach to forecasting...

Backup environments are very complicated and complex systems. General System Dynamics has developed a new, sophisticated

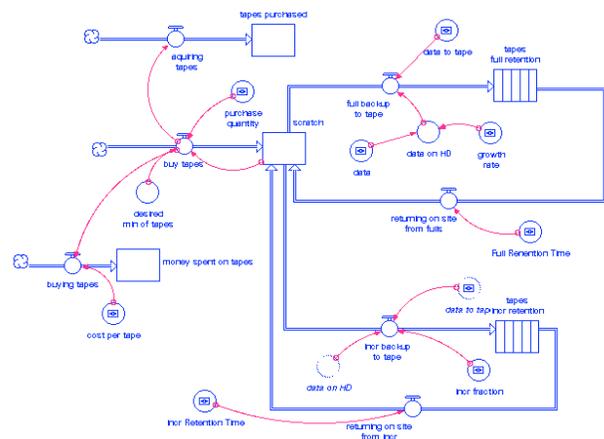
approach to forecasting based on system dynamics modeling. Our system dynamics modeling tools model the natural feedback loops that occur in your storage systems to forecast how much media (disk or tape) that you'll use over any period of time. A simple feedback loop for using tapes might look like this...



A similar feedback loop for a disk based VTL...



However, in real life, the systems feedback loops are far more complicated and look more like this...



<http://www.gsysd.com>

# Storage Forecaster™



The only way to get a handle on the true costs, and more importantly, the savings for your business is to use the Storage Forecaster to forecast your storage use. The Storage Forecaster takes the complexity out of forecasting by doing all the work for you. With the Storage Forecaster you can...

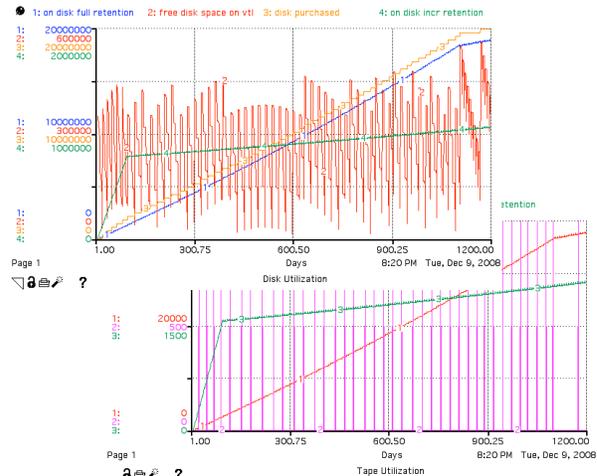
- See the rate at which you use disk or tape in your environment.
- See the costs of running your backup environment.
- Run what-if scenarios to identify cost savings without having to make any changes to your environment.
- Compare costs of backing certain data sets up to disk or to tape.
- See the impact of a legal-hold on your backup environment and the costs associated with e-discovery.

## A real life scenario...

A large manufacturing company was faced with mounting costs of doing backups, increased quantities of tape purchases and off-site storage costs. They wanted to know how to cut their costs and reduce the number of tapes they were both sending off site and purchasing. The problem they had was they couldn't accurately tell how many tapes they would have to buy, or what it would mean to replace their tape library with a VTL without spending a lot of money on a VTL and seeing if it worked. With the Storage Forecaster they were able to get the answers to their questions quickly. They just needed to provide a few pieces of information listed in the following table.

Average Backup	Average Amount	Frequency	Retention
full	100TB	weekly	3 years
incremental	10TB	daily	90 days
data growth rate:		10%	
avg. capacity per tape:		500GB	
cost per tape:		\$50	
cost per GB of disk:		\$3	

With this information we were able to run simulations of their environment and produce charts illustrating the behaviors of media consumption in their environment over several years for both disk and tape.



Once the analysis was complete we were able to show that with their current practices they were purchasing 40,000 tapes at a cost of \$2M. If they were to migrate to a tapeless architecture the disk costs would be \$59.85M. We were able to show various alternatives to their data protection practices and ran new simulations with more effective practices; practices with an eye toward cost savings and data protection. The results after running the simulations was a *reduction* of tapes by 24,000 and a *cost savings* of \$1.2M for tapes and \$35.67M for disk with an ROI of 3,900%.

The return on investment for this customer was accomplished in less time than it takes to get a cup of coffee from the corner coffee house. By using the Storage Forecaster, you will be able to see the systemic behavior of your environment and where your greatest opportunities for cost savings are. Only by using the Forecaster and running what-if scenarios will you be able to reign in your backup costs for data storage.

Email us at [info@gsysd.com](mailto:info@gsysd.com) to discuss how the Storage Forecaster can shed light on your backup practices and to see how much money you can save in your backup environment.

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