General System Dynamics comes from a background of working closely with Legal, Financial and Fortune 500 clients and listening to them about the challenges that distract their I.T. Departments from their core business. Often, we find that technologies employed by companies are either the wrong fit, improperly architected or implemented, or that the solution is limited.  That is where our products and services, designed to support whole systems, come in to play.

Listed below are three of our service offerings; Data Manager™, Storage Forecaster™ and our Consulting Services. On the following pages are each service offering in greater detail.

## Data Manager™

Data Manager helps company's I.T. Departments with data preservation for electronic discovery as required by the U.S. Federal Rules of Civil Procedure (FRCP).  With Data Manager, interfaced with your backup application, you create secure legal-hold containers within your backup environment that preserves sensitive data for electronic discovery, manage the holds and provides comprehensive reporting including the financial impact of each legal hold.  See page 2 for more information.

## Storage Forecaster™

Storage Forecaster helps I.T. Departments with capacity planning in their data storage and data backup systems.  With Storage Forecaster you can simulate your current storage environment to more precisely gauge how much storage you will consume on either disk or tape.  You can alter the simulated backup jobs in order to see the financial costs and storage resource impacts without ever affecting your production backup environment. Comprehensive reports provide quantitative analysis, graphical pattern analysis and financial impact reports.  See page 3 for more information.

## Consulting Services

We are dedicated to providing whole systems consulting services for our clients. The nature of our business is understanding systems.  And because those systems know no boundaries, we are able to provide solutions that are efficient, coherent and well-designed across a wide range of industries.  See page 4 for more information.

It takes 20 years to build a reputation and five minutes to ruin it.
If you think about that, you'll do things differently.

—Warren Buffett

## Contact Information

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**Service Snapshot**

**The Problem**
Processing legal holds for electronic discovery is difficult and costly.

**Who it effects**
*Legal Departments* worry about freezing too much or too little data.
*I.T. Departments* dread the lack of tools and technologies to get the job done.
*Business Managers* fret over the expense involved in preserving the data.

**The Solution**
Data Manager™ makes it easy to process legal holds for a fraction of the cost it takes with current data management methods or the costs of non-compliance.

**Do you believe that your company is ready for electronic discovery? Ask yourself these questions:**

- Are you willing to go to jail for your company?
- Have you ever gone through a company wide data 'freeze'?
- Have you received a subpoena lately?
- Are you responsible for your companies data?
- Are you prepared to pay fines in excess of $250,000 for your company?
- Do you know what's on your backup tapes and which tapes have subpoenaed data on them?
- Have you ever had a massive service outage from 'freezing' data in your virtual tape library?

*Did you know the industries most popular backup applications can not identify, preserve, manage or execute legal holds for electronic discovery?*

## Now, do you believe your company is *REALLY* ready for electronic discovery?

With Data Manager you gain total control over your backed up data and manage it according to your specific business requirements. Data Manager interfaces with your backup application[1] and provides you with a easy to navigate Web 2.0 interface to manage your most valuable data. With Data Manager you will be able to:

- Reduce unnecessary data exposure that may increase your companies liability by freezing too much information.
- Stop throwing away money by freezing everything, instead of only what's required by the law.
- Stop wasting valuable time and resources writing custom, cumbersome single use scripts that can't be maintained.
- Simplify management of multiple legal holds. No more complicated spreadsheets for tracking thousands of tapes, their location, what data is on them and what legal matters they belong to.

Legal Holds are complex and require management of overlapping information. You can have data spanning several storage areas, shared across: servers, tapes, disks, files, backup policies, etc. These relationships come in the many to many variety and only Data Manager can manage the data and their relationships for you so you are able to respond to legal hold requests for electronic discovery without worry.

Data Manager easily preserves data specific to your needs. Attorneys, with appropriate access, can preserve data required for electronic discovery. Backup & Storage Administrators can preserve data without having to search through cumbersome and complex interfaces. System Administrators and Engineers don't have to write custom, single use, undocumented and impossible to maintain scripts nor have to execute proprietary commands at the command line.

With Data Manager, data under discovery is easily managed and classified by specific legal matter. Data Manager provides comprehensive reporting for all data under discovery including financial impact analyses, media under hold, over-exposed data and a myriad of other reporting options.

Call us now to learn more about how Data Manager can help your company reduce its costs, reduce its liability and gain control during electronic discovery.

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|---|---|
| **Service Snapshot** | **The Problem**<br>Accurate capacity planning is very difficult and not doing it, or doing it incorrectly is costly and can result in a major data loss.<br><br>**Who it effects**<br>*I.T. Departments* worry about systems being in jeopardy and failing to meet service levels. *Business Managers* fret over the expense involved in ever increasing data growth rates.<br><br>**The Solution**<br>Storage Forecaster™ makes it easy to do capacity planning for a fraction of the cost of traditional, less accurate methods. |

Until now, accurately calculating how much storage you use in your backup environment was an impossible task. Companies unable to conduct accurate capacity planning can expect to experience interruptions of service, emergency expenditures and lost business.

- How much will it cost you this year to run your backup environment with increasing data growth rates?
- How many tapes do you burn through?
- How much disk does your virtual tape library (VTL) use?
- Can your de-duplication storage withstand a legal-hold? Two legal-holds? Three?

## Traditional capacity planning methods are wholly inaccurate

Typically, businesses make an educated guess of how much storage they are going to need to purchase each year for their backup environments because it's difficult to calculate how much storage they'll burn through. Most organizations send out more tapes than they receive from off-site storage, or write more data to disk than they can reclaim due to lengthy data retention requirements and increasing data growth rates. This means that businesses often find themselves running out of tapes or disk space and have to rush to buy more. This results in backups failing due to a lack of storage resources, an inability to recover lost data, being unable to meet SLAs, and falling out of compliance. Additionally, legal-holds can wreak havoc on an I.T. Departments ability to manage storage due to the 'freezing' of data that may be required for e-discovery.

Disk based backups and VTLs are not exempt from the same challenges of calculating consumption. In fact, the financial impact of not being able to forecast your disk usage in your backup environment are substantially larger and will have a significantly larger impact in your data center as well.

## A new, sophisticated approach to forecasting

Backup environments are very complex systems and in order to employ them better, we've developed a new, sophisticated approach to forecasting based on system dynamics modeling. Storage Forecaster takes the complexity out of forecasting your data storage systems by modeling the natural feedback loops in your environment to forecast how much media (disk or tape) that you'll use over any period of time.

With Storage Forecaster you can:

- Run backup simulations of your current data backup systems in order to see how much storage you'll consume either on disk *or* with tape.
- You can alter the simulated backup jobs in order to see the financial costs and storage resource impacts without ever affecting your production backup environment.
- Generate comprehensive reports providing quantitative analysis, graphical pattern analysis and financial impact.
- Compare and contrast the costs of backing up and storing data disk or on tape.
- See the impact of a legal-hold on your backup environment and the costs associated with e-discovery.

The only way to get a handle on the true costs, and more importantly, the savings opportunities for your business is to use Storage Forecaster. Call us today.

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**Service Snapshot**

**The Problem**

Expert Business and Information Systems analysis from a fresh perspective cannot happen from within an organization alone. Stagnation ensues. Gaps and errors in information never become apparent resulting in missing, or even worse, bad information.

**Who it effects**

I.T. Departments worry they don't have the resources nor perspectives to analyze systems to accomplish business goals.

Business Managers agonize whether competing companies are better utilizing technologies or employing better practices.

**The Solution**

General System Dynamics employees demonstrate extraordinary erudition in consulting and help companies focus on what's most important to them, their business.

We are dedicated to providing whole systems consulting services for our clients. The nature of our business is understanding systems. And because those systems know no boundaries, we are able to provide solutions that are efficient, coherent and well-designed across a wide range of industries.

Do you have a project that needs a fresh perspective?

These are just some of the projects we're working on with clients in various industries:

I.T. Assessments
Storage Area Networks (SAN)
Networked Area Storage (NAS)
Data Backup Systems
Off-Site Tape Storage, Policy Audit & Assessments
Standard Operating Procedures
Documentation
Legal Hold Process Management & Consulting
Implementations
Data Migrations
Auditing
Storage Forecasting

Partner Relationship Management
Process Evaluation
Storage and Backup Reporting
Product Evaluation & Feature Comparison
Compliance Projects
ITIL
Information Lifecycle Management (ILM)
Technology Bake-Off's
Script Management and Inventory
Data Protection and Information Security Review
System Dynamics Modeling
… and many more.

Call us today and ask us how we can help.

[1] Data Manager currently works with all versions of Symantec/Veritas NetBackup. Future versions are planned for integration with EMC/Legato NetWorker and IBM Tivoli Storage Manager. Contact info@gsysd.com for details or if you'd like to participate in the early adopter beta program.