

**4 PRACTICAL
WAYS TO GET
MORE VALUE FROM
YOUR DISASTER
RECOVERY EFFORT**

**GLOBAL
TECHNOLOGY
SOLUTIONS
GROUP**



Introduction

From the early days of computer rooms and data centers, the role of Infrastructure & Operations has been to protect the business while enabling it. From our own origins 33 years ago, GTSG has had the same mission: helping clients to enable, protect, and get the most from their information technology investment.

One of the most important aspects of this protection- and of enablement, in times of stress- has been Disaster Recovery.

When we read that Forrester Research and the Disaster Recovery Journal had challenged I&O to improve, we wanted to help.

Forrester and the Disaster Recovery Journal surveyed dozens of global IT disaster recovery decision makers just before the pandemic.ⁱ These professionals tell us that recoveries are taking longer and firms are losing more data... it's time for I&O professionals to step up their game.

So how does Forrester suggest that I&O professionals step up?

- **Review evolving risk scenarios, BIA, DR plans, and DR tests.** Make BIAs (Business Impact Analyses), risk assessments, DR plans, and DR testing processes continuous rather than treating them as one-time or periodic updates.
- **Automate recovery procedures.** The complex technology and processes we face today are beyond what humans can manage.
- **Partner with those who are best at doing it.**
- **Proactively engage security and risk pros to develop plans to address cyberattacks.**ⁱⁱ

Effective recoverability is a detail-intensive job. GTSG has four ways to help.

To get the most for the business from the investment with which we're entrusted, we need to:

1. Align with Risk Management
2. Understand the Business Impact
3. Architect for Recovery
4. Plan, Test and Exercise – then close the loop

We think of this as a cycle: on a landscape of ever evolving threats, the effectiveness and the cost of our mitigation efforts must be visible to those responsible for risk management and business continuity

“Recoveries are taking longer and firms are losing more data”

It's time for I&O pros to step up their game. -Forrester



Alignment with Risk Management

The responsibility of Infrastructure & Operations is to **execute** on the decisions of the professionals encharged with **identifying and mitigating risk**.

There are two reasons for this:

- first, everyone should be clear about where our risk mitigation investment dollars are going- the costs of downtime and the costs of preventing it .
- everyone should be equally clear about the effectiveness of our mitigation strategy when subjected to stress- much better from exercise/test, than from a declared event.

The job titles of these professionals will vary from one organization to another – we may be responsible to the risk management, business continuity, or perhaps the finance function for a mid-sized enterprise. As the past two years have reminded us, risk profiles change constantly. Not that many years ago, few were talking about ransomware; today it's a prime threat, and a different type of threat, as the bad guys frequently target the backup as much as the primary.

A cautionary tale from experience

We once saw a “perfectly executed” out-of-region second site design, build and cutover project.

The only problem? Senior management was far more concerned with localized issues (including some caused by poor management practices) than it was with regional disaster. In other words, to meet the real risk mitigation needs of the business, the second site could have been within an hour's drive instead of over 800 miles away.

Disaster Recovery is expensive: an average in the range of 7% of IT spend. If we're overspending on protection where we don't need it, then we're either under protecting where we do, or diverting funds from revenue generating projects.

Gartner tells us that at least 24% of organizations target a recovery time objective (RTO) of one hour or less for all tiers of IT services.ⁱⁱⁱ Obviously, all tiers do not require the same level of recoverability. And those decisions can only be made properly in the context of a properly constructed – and current - Business Impact Analysis.

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The Business Impact Analysis

According to a recent enough Gartner survey, 70% of organizations are “making disaster recovery decisions without any business-aligned data points, or on the basis of an outdated business impact analysis (BIA).”^{iv}

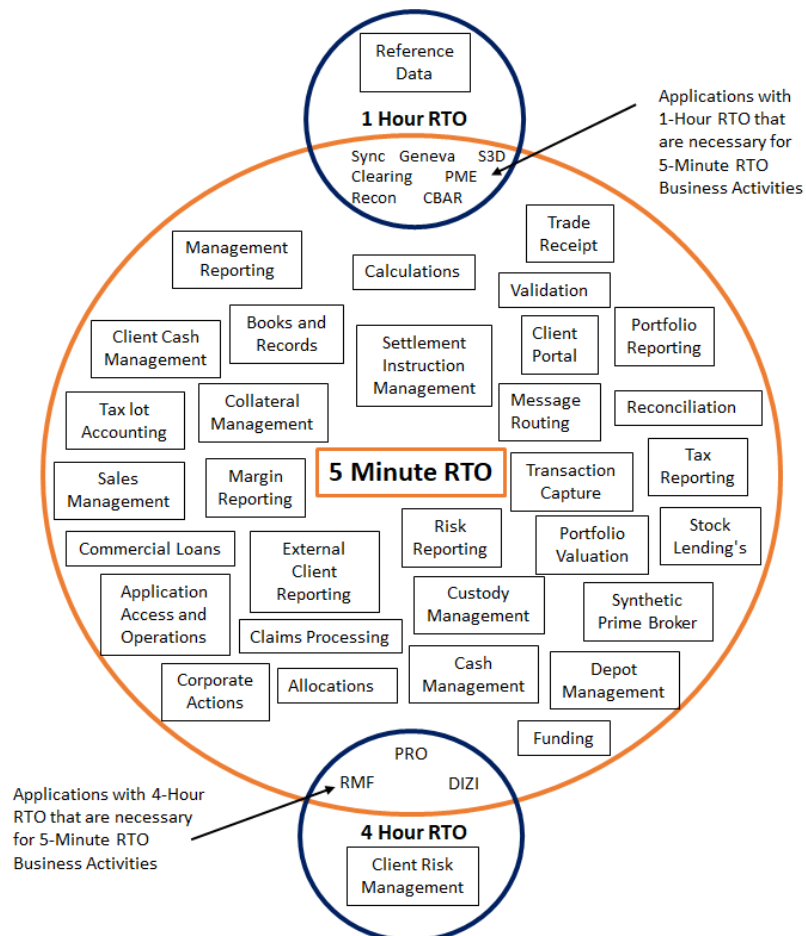
A true Business Impact Analysis requires a deep understanding of the interrelationships among applications, databases and services (including those based in cloud of any flavor- IaaS, PaaS or SaaS).

What happens when we don't do this work?

Illustration: A large brokerage firm had not done the work to validate that the Recovery Time Objectives (RTOs) for their mission critical applications were supported by the applications, databases and services on which they depend. GTSG performed the analysis and identified

- 10 major applications with a 1-Hour RTO, and
- 3 major applications with 4-Hour RTOs

...that were necessary for **5-Minute RTO Business Activities**.



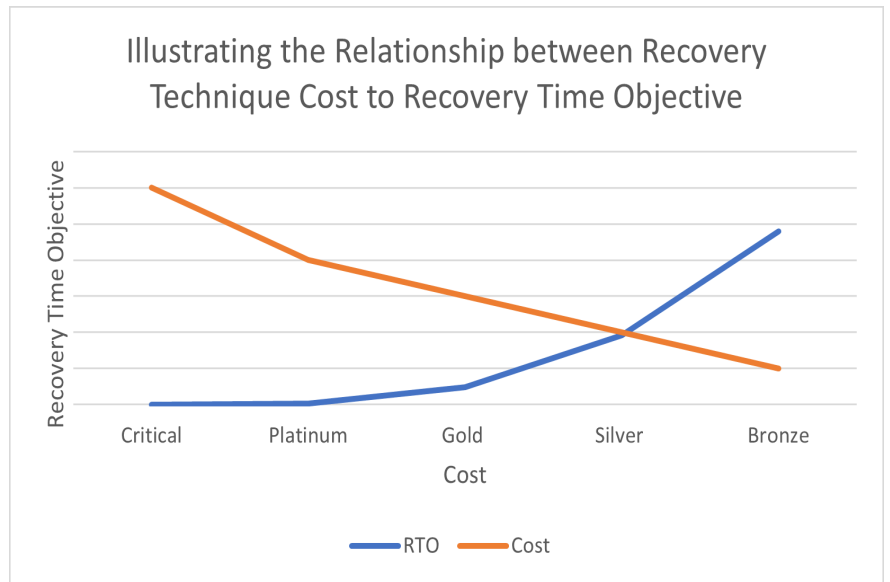
Architect Recovery

To us, architecting recovering means two things:

- the selection of recovery techniques, and
- the automation strategy which will drive execution under the most stressful of circumstances.

Recovery technique

Once your tiering is properly understood in the context of the BIA, we can establish the appropriate recovery technique. There's a relationship between recovery time and recovery point objectives (RTO/RPO), techniques, and the investment required to support them. The chart below expresses this relationship simply:



...illustrating the relative cost and the recoverability of synchronous replication on the left end to cold storage on the right.

We need to architect for DR for cloud as well

Most DR professionals by now are aware that the mere presence of a workload in the cloud does not carry any sort of inherent protection. We still hold the responsibility to plan for DR. Critically,

Technologies traditionally used to implement on-premises DR initiatives are typically incompatible with public cloud IaaS providers, leading to significant reengineering of DR implementations for cloud-based workloads.^v

DRaaS can provide significant savings, but only after careful study

Some operations lack a secondary recovery data center, lack experienced staff, or – alternatively – want to move in that direction (“get out of the data center business”). For these, Gartner tells us that DRaaS can provide savings of 30-50% compared to the costs of establishing and maintaining these capabilities.^{vii}

Gartner also tells us that DRaaS includes four elements - on-demand IaaS, replication, recovery SLAs, and automated recovery & failback. The “functional alternatives” to DRaaS – backup/replication software, resilience/orchestration software, IaaS and traditional DR – each lack at least two of the four features. So a true and detailed “apples-to-apples” comparison is required to be certain that the savings are as appealing as they will initially appear to be.

Plan, Exercise - and Close the Loop

Our own 33 years of experience – supported by every expert we’ve ever seen or heard comment on this topic- tells us that (a) detail is critical and (b) the plans out there aren’t detailed enough.

Detailed Documentation is the Key

One engagement performed by our GTSG consultants was necessitated by consolidation of four disaster recovery centers to a single mega center. Application run books, drawings and recovery procedures were years out of date and needed to be re-tooled prior to establishment of the new mega center. Only then could this board-level audit exposure be closed.

Our approach was to create an “Application Design Factory” that enabled:

- Development of a Reference Architecture for each recovery scenario – Application Recovery Design
- Development of repeatable procedures for recovering applications – Application Recovery Procedures
- Development of repeatable migration plans for moving the applications from the old centers to the mega center. These migration plans included application and infrastructure modification requirements to align with the solution design.

Our client now has a consistent, repeatable process for establishing application DR requirements and deploying the infrastructure and processes required to support each application design.

The Design Factory has accelerated their DR consolidation initiative and brings with it significant associated financial and operational benefits.

A mainframe success story: true out of region recoverability

The best way to illustrate this is with a success story borne of our mainframe expertise.

Our client, a large provider of a broad range of financial services, had been without a viable DR capability for over a decade. Its two data centers ran in close proximity (less than 10 miles apart), leaving them without protection against a regional event.

The client decided to relocate the smaller of the two data centers from company headquarters to a modern facility in the Ashburn corridor, which would become its DR facility. Their DR documentation, already outdated, needed new detailed design and recovery procedures based on the move.

The client injected us into meetings with vendors critical to this transition. We immediately began a sub-project to consolidate the mainframe technology in advance of the DR standup, so that opportunities for change were leveraged as the data center consolidation occurred.

We stood up the new environment in Ashburn with an equal capacity CBU box, Global Mirrored DASD, and a VTS in a three-node grid with the primary and secondary site. In addition, we defined an isolated network which enabled concurrent DR testing without impact to production systems, and to be leveraged for application-level testing if required. Concurrently, we were rewriting DR plans for the client.



Relentless Testing Drives a 95% Reduction in DR Infrastructure IPL

Continuing with our success story: we conducted an IPL of the Ashburn DR facility from a flash copy, and in a timed test, brought the entire infrastructure up in 62 minutes. Additional testing continued for 10 days, for the full complement of mainframe applications, and continued to enhance the plan to reduce manual involvement. We reduced the infrastructure IPL to less than three minutes, overlapping, for the seven LPARs during this period.

At the successful completion of each of these workstreams, the client had tested DR successfully twice, four months apart.

The team overcame untold numbers of equipment delays, telco issues, “surprises” where our design was not adhered to, and other issues. The effort was completed with days to spare, so that the client’s second data center and hardware could be removed in time to avoid vendor carryover penalties.

In sum, the team achieved:

- Proven, tested, out of region recoverability for the first time
- An on-time/on-budget project

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If you've read this far and you'd like to discuss further, let us know [HERE](#). GTSG is now, and will remain, technology neutral and 100% independent: we will not take one dollar of commissions from any provider of any product or service for any recommendation we make to you. You'll know that our advice to you is based solely on what's best for your efforts to mitigate risk in a cost-effective fashion.

References:

- i) Forrester and DRJ, "Global Disaster Recovery Practices and Preparedness November 2019"
- ii) Ibid
- iii) Gartner, "Survey Analysis: IT Disaster Recovery Trends and Benchmarks", published 30 April 2020
- iv) Gartner, "Market Guide for Disaster Recovery as a Service," published 25 June 2020
- v) Gartner, Market Guide for Disaster Recovery as a Service, 25 June 2020
- vi) <https://www.datacenterknowledge.com/uptime/microsoft-blames-severe-weather-azure-cloud-outage>
- vii) Gartner, "How to Determine If DRaaS Will Save Money," 29 September 2020, by Jeffrey Hewitt, Ron Blair

If you'd like to discuss improving your disaster recovery efforts, please reach out to Partners@GTSG.com

GLOBAL TECHNOLOGY SOLUTIONS GROUP

**T 877 467 9885
F 877 225 4084**

**W GTSGSERVICES.net
E Partners@GTSG.com**

<p>HYBRID CLOUD STRATEGY AND MIGRATION</p> <p>Strategic Approach</p> <ul style="list-style-type: none"> • Business case development • Transition planning • Technical modeling • Non-disruptive execution <p>Application Analysis Methodology and Tools</p> <ul style="list-style-type: none"> • Decomposition • Affinities • Wave planning <p>Project Leadership</p> <p>Implementation Subject Matter Expertise</p>	<p>INFRASTRUCTURE TRANSFORMATION</p> <p>Transition Services</p> <ul style="list-style-type: none"> • Insourcing/Outsourcing • Knowledge transfer and interim support • Application migration • Service management design <p>Disaster Recovery Design and Implementation</p> <p>High Availability Design and Implementation</p> <p>Application Assessment and Deployment</p> <ul style="list-style-type: none"> • Reference Architecture • Infrastructure Alternatives/Recommendations • Implementation/Migration
<p>INFRASTRUCTURE SUPPORT SERVICES</p> <p>Managed Services</p> <ul style="list-style-type: none"> • Multi-platform including DB & MW • Service-level based or FTE-based • Architecture, administration, programming, systems management • Remote or Onsite <p>Project Based Services</p> <ul style="list-style-type: none"> • Platform upgrades • Workload migrations • Implementation services • Consulting and Assessment (performance, DR, HA.) • Project Management 	<p>INFRASTRUCTURE OPTIMIZATION</p> <p>Architecture Assessment and Design</p> <p>Server Virtualization/Consolidation</p> <p>Storage Optimization</p> <p>Data life-cycle management</p> <ul style="list-style-type: none"> • Tiering • Standardization/Automation <p>Application Decomposition Application</p> <p>Re-design/Remediation Performance</p> <p>Management and Tuning Latency</p> <p>Analysis and Consulting</p>