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5 Rings of Data Integration Hell

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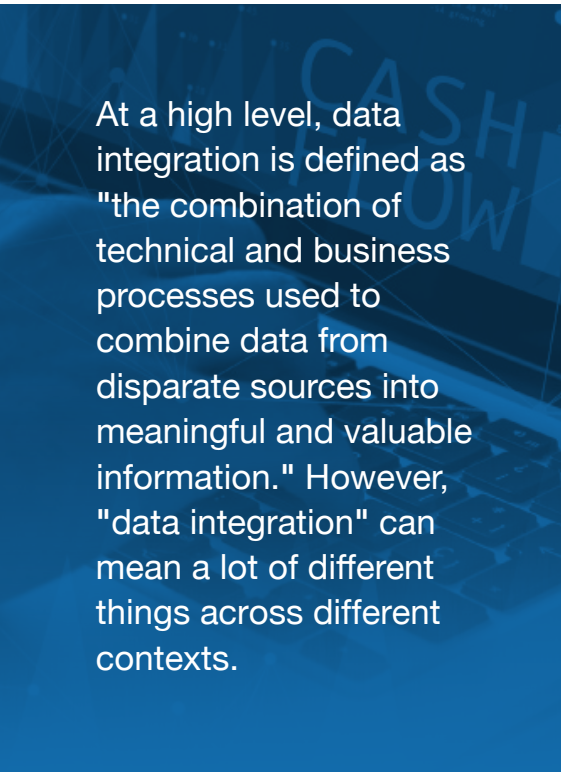


At a high level, data integration is defined as "the combination of technical and business processes used to combine data from disparate sources into meaningful and valuable information." However, "data integration" can mean a lot of different things across different contexts.

Dante's "9 Circles of Hell," presented in Dante's Inferno, the first part of Dante's Divine Comedy, describes the poet's vision of Hell. The story depicts a journey through the 9 circles of hell, all characterized by increasing levels of an individual's depravity, and presumably, increased levels of punishment.

"A strange opening to a whitepaper on data integration," you may be thinking. There are, however, certain corollaries when it comes to addressing data integration issues in your environment that, when not properly addressed, create severe levels of "anguish" on a daily basis. Compounded, these issues can affect company efficiency, profitability, and tenure in your current position.

The topic of data integration is on the minds of many IT teams. And, it's created a lot of buzz. The business functions you support rely on accurate and timely data at their fingertips to make solid decisions or keep operations running smoothly.

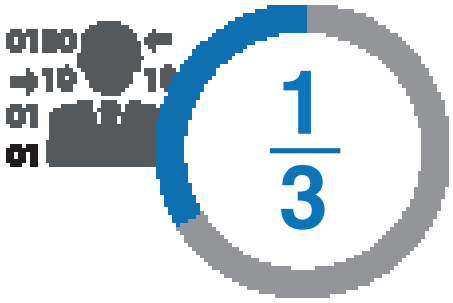
At a high level, data integration is defined as "the combination of technical and business processes used to combine data from disparate sources into meaningful and valuable information." However, "data integration" can mean a lot of different things across different contexts. You likely have one or more of these scenarios within your organization:

Data integration with outside organizations – If your organization outsources any functional area or process, chances are you'll need to exchange confidential, time-sensitive, or voluminous data. Common methods of sharing data such as email or file transfer protocol (FTP) may not meet the required levels of security and could put your organization at risk for falling out of compliance with industry standards or privacy regulations. For example, would you want your HR team sending payroll data to a third party to process paychecks via these unsecured methods?

Data integration across applications – The number of applications within an organization continues to grow. According to CIO.com, a recent survey revealed that 50 percent of organizations with $500 million or more in revenue have more than 500 applications deployed. Along with this growth in application adoption comes an increased need to combine data across these various systems. While many applications may directly exchange data from one to another, not every application makes this possible or cost effective.

Data integration due to a business merger – Once organizations merge, moving forward with a single strategy, combined business processes, and set of key performance indicators (KPIs) to measure successes is all dependent on data integrated from the two affected companies. McKinsey cites that 50-60 percent of the initiatives intended to improve combined business processes are related to IT. Yet, IT issues are not fully addressed during due diligence or early stages of post-merger planning. This leaves IT to discover issues around data post-merger and resolve those issues rapidly.

Data integration as a part of Big Data and analytics – According to IDC, revenues for Big Data and business analytics will increase to more than $187 billion in 2019, representing an increase of more than 50 percent over a five-year period. Clearly, more and more IT teams are synthesizing and analyzing data from various sources to drive business decisions. But the complete view that Big Data promises relies on data likely sourced in disparate systems with different data structures.



To overcome interoperability issues, most companies are forced to create patchwork, often manual solutions just to keep their data flowing. However, when relying on manual and intermittent batch processes to deliver data, the user's day-to-day productivity becomes dangerously vulnerable.

Across these different circumstances, there are commonalities. In each case, the business demands reliable and timely data at their fingertips. Yet, the task for IT to meet this need is growing more complex.

In this piece, we'll describe the "5 rings of data integration hell" that make meeting these data integration requirements increasingly difficult. We'll also explore approaches to migrate or exchange data in order to meet business needs, as well as the key considerations for IT when choosing a data migration method.

5 "RINGS" OF APPLICATION INTEGRATION HELL

Ring 1: Failure of Interoperability

Technology expansion continues to snowball, changing the way we operate in the workplace. As new technology is adopted, data flow between those systems is both critical and often cumbersome. Interoperability between critical business systems involves the capacity for multiple devices and systems to exchange and interpret data.

Legacy, non-integrated systems create serious business efficiency and agility issues when data cannot be easily accessed and analyzed as part of a larger dataset. Business agility, in any industry, speaks to your ability to both operate efficiently and respond to change swiftly. Without the right data, or all of the data, this is just not possible. *Interoperability is key.*

For instance, consider the effects of non-interoperable systems on the healthcare industry. According to research from the Ponemon Institute, approximately $8.3 billion in healthcare costs are being attributed to outdated, non-integrated systems—systems that cannot communicate with each other. The same study notes "80 percent of healthcare providers said that electronic data exchanges increased their efficiency […]." When processes interfere with the ability to send and access information reliably and securely, that's when inefficiencies and productivity issues start translating to negative dollar signs. Non-integrated legacy healthcare systems that shift to an interoperable system can save taxpayers more than $30 billion a year on wasteful spending.

While there are many variables beyond anyone's control leading toward rising healthcare costs, a failure in interoperability can lead to multiple unexpected costs. The U.S. hospitals within the healthcare industry are a prime example of how operating without interoperability can have a domino effect on an organization. Unfortunately, hospitals have seen their operations take a hit in the shape of lost productivity, increased patient discharge times, and wasted IT budget.

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Ring 2: Data Downtime

At Globalscape, we've been told by companies that the inability to exchange data for a single hour could cost their organization up to **$500,000**. These risks increase as the stakeholder needs and demands get more complex. However, to deliver the

uptime and complex functionality that your stakeholders want could also strain your infrastructure, hurt your performance, and negatively affect compliance. According to Ovum Research, **77 percent** of organizations say that **data exchange failures** would have a **critical business impact,** including missing Service Level Agreements and major loss of revenue.

Alarmingly, Ovum Research also finds that 57 percent of organizations are using gateway technology that's **more than 5 years old** that lacks secure data exchange capabilities, increasing the risk of data loss based upon downtime and ever-changing threats.

In 2016, the staggering cost of downtime was $8,850 per minute, according to a study by Emerson. While IT feels the pressure to resolve outages, it is a critical business issue that can have serious consequences: business disruption, lost revenue, end-user productivity loss, service level agreement violations, etc.

If an organization wants to gain a competitive advantage, then its data needs to keep moving. With so many variables and potential communication obstacles that can happen beyond your control, having to deal with downtime issues, or having to restart failed file transfers is an inefficiency that can be supremely embarrassing in many customer-facing situations.

When you need to handle a high volume of data in a demanding production environment, you want a seamless data exchange to keep your Big Data flowing throughout your internal systems, processing infrastructure, and external vendors and partners.

You need a highly available and powerful data gateway to keep the data flow moving without interruption. A high availability (HA) configuration has many benefits:

- Maintains availability through any planned or unplanned outage
- Increases stability and flexibility by implementing multiple nodes of a managed file transfer (MFT) solution for load balancing
- Enhances throughput and allows you to better meet important service level agreements (SLAs) by deploying multiple nodes of MFT to allow the collective MFT environment to use more available resources
- Improves scalability with the ability to share common configurations across nodes, eliminating the challenge of having multiple servers set up with different configurations

Ring 3: A Lack of Visibility and Control

Your data is the **lifeblood** of your business, and ensuring that it moves efficiently and securely (both in and outside of your organization) is critical. Yet, for something so important, we're often surprised to see how many organizations are littered with non-compliant and rogue data exchange solutions, making the environment ripe for failed data transactions. End users with good intentions, and often as a result of an overloaded IT department, find their own solutions to moving data, bypassing internal IT and resulting in unmanaged, unsecured solution sprawl. It's these patchwork and manual solutions that lead to the lack of visibility and control over how company data is being exchanged. Hence the need to get your arms around and consolidate these diverse, Band-Aid and shadow IT solutions.

This lack of visibility and control has serious consequences. A Forrester study found that 47 percent of security breaches were caused by either inadvertent misuse (32 percent) or deliberate abuse (15 percent) by an insider. The problem can be traced in part to a lack of control over data sharing with conventional strategies such as email, FTP and consumer-grade cloud services.

Disparate applications reduce the amount of visibility and control an organization needs to maintain a secure and compliant environment. A robust data exchange platform is a necessary requirement to give IT the advantage, enabling them to control data accessibility at any level. From a preventative standpoint, visibility and control proactively supports an organization's security policy and compliance regulation requirements on data exchange. With disparate applications, the compliance audit process is arduous and time consuming.

Consider organizations in the finance, retail, and healthcare sectors. The higher volume of sensitive data that they manage is highly regulated, and any violation penalties that originate from improper handling can be extremely damaging, from expensive fines to lawsuits, and reputational damage.

Multiple systems create real support inefficiencies as well. Multiple logins, multiple policy sets that create configuration and security holes, reporting complexities, management overhead, and uncontrollable costs.

And these problems continue to mount as additional stakeholder needs and requirements grow. You need a proactive way to get your arms around this issue without affecting company productivity and flexibility.

Ring 4: A Lack of Scalability

Regardless of the success of current data exchange processes, stakeholder demands and service-level requirements will continue to increase, straining your infrastructure and resources. Growing pains are common for organizations, but that doesn't mean IT can afford to switch products every time the organization sees growth. Rip and replace solutions quickly add up in cost and require deployment dedication that takes significant resources away from more strategic initiatives.

The scalability of a solution speaks to the data management and IT infrastructure needs of an organization. Having the flexibility of a fully-scalable solution can often mean that an organization can be better prepared to grow and handle the fluctuations in data volume—all of which can be achieved without interrupting daily workflows. Many legacy systems lack this required scalability.

Lack of scalability has consequences as well: data flow slow down due to large or extreme loads, missed SLAs resulting in financial penalties, reduced employee productivity, and reduced business agility.

To accommodate growth, IT must implement a solid technology foundation, designed around scalability with strategic view to company growth.

Ring 5: Keeping Data Secure

According to Symantec's 2016 Internet Security Threat Report, the number of zero-day vulnerabilities discovered more than doubled to 54, a 125 percent increase from the year before. In other words, a new zero-day vulnerability is discovered each week. Spear-phishing campaigns targeting employees increased 55 percent.

Businesses of all sizes are potentially vulnerable to targeted attacks, and most are likely to be targeted at least three more times during a year after being targeted once. Sadly, according to Juniper Research, the average cost of a data breach will top $150 million dollars by the year 2020.

As the frequency and severity of cyberattacks and information leakage incidents continues to peak, data loss is the most hazardous risk to an organization in the contemporary enterprise landscape. According to Verizon's Data Breach Report, 2015 faced an ongoing torrent of high-profile data base intrusions, insider misuse, privacy incidents, physical theft and loss, point of sale system attacks, and a range of additional cybercriminal activity across nearly every professional sector.

Many of the file transfer conveniences—and corporate security risks—that exist today emerged nearly a decade ago, from Dropbox, Google Drive, and the BYOD movement. These advances in consumer technology and behaviors introduced major challenges for corporate IT departments, as individuals frequently leveraged these technologies for work-related purposes, oftentimes without the organization's consent. This type of shadow IT speaks to a lack of application integration and availability of an easy-to-use file transfer solution. At the same time, it speaks to a weakness or lack of a security policy.

Protecting sensitive data, whether in transit or at rest, is an imperative for modern IT departments. Many organizations have worked diligently to protect data at rest, implementing network security controls to prevent unauthorized access. Protecting data in transit, such as email messages, removable drives, rogue data exchange solutions, etc., is often not addressed. Data in transit, particularly outside of the corporate confines, requires either encrypted connections or data encryption (HTTPS, SSL, TLS, FTPS, etc.) to protect valuable content.

Data in transit and data at rest have different risk profiles, but hackers will attempt to steal data whether it's in motion or at rest. A proactive approach to protecting this data is required, particularly as data is exchanged between systems, partners, and external vendors.

ACHIEVING LEVELS OF NIRVANA WITH DATA INTEGRATION

As we've described, integrating and moving data within your organization can be problematic, leading to serious business issues and consequences. To address these issues, many companies have implemented MFT technology with a rich set of features that support the secure and reliable transfer of data. To address these issues, many companies have implemented Managed File Transfer technology with a rich set of features that support the secure and reliable transfer of data. A robust MFT platform allows for secure file transfer between servers, between persons, and between servers and persons.

Here are some of the ways an MFT platform can help you avoid the “rings of hell” we’ve talked about and achieve levels of Nirvana when considering data integration and exchange:

Moving Data Between Disparate Applications with an Interoperable MFT Solution

Acting as a data conduit, MFT platforms can help move data from disparate applications and systems more fluidly throughout your IT infrastructure. MFT can provide the ability to track, manage, and secure files in transit from system to system, application to application, and user to user. MFT can also automate the movement of data, removing human error and resource utilization.

Achieve Optimal Uptime with MFT

Deploying an MFT solution in an HA, active-active clustering architecture will allow you to achieve maximum uptime. While no IT team can guarantee 100 percent availability, they can take steps to minimize downtime and enhance their core system’s availability.

Deploying an MFT platform in HA configuration means you can deliver the level of availability to which you’ve committed in end-user and vendor SLAs.

Get Back in the Driver’s Seat with a Centralized MFT Platform

Where disparate applications can interfere with visibility and control, increasing risks to security, compliance, efficiency, and productivity, MFT addresses many of these risk areas all at once thanks to the central functionality of the platform.

MFT can be integrated across enterprise email, messaging, collaboration, and financial transaction applications and platforms. The value of these services is ubiquitous, handling a variety of commonplace concerns. With MFT, organizations can monitor and report on the pace of file movement, location of files, delivery times, and completed file transfers—all essential information to manage an organizations data flow successfully from a central location.

Future-Proof Your Business with MFT

An MFT solution can future-proof your organization’s IT data exchange infrastructure with the ability to handle an increase in file transfer volume, file sizes, and more broadly, MFT can help address long-term business growth and normal spikes in activity. Ultimately, MFT helps organizations meet the greater demands that large datasets and increased file transfer volume are likely to bring.

Protect Data in Transit and at Rest with MFT

When organizations implement MFT technology, they are providing their employees a secure and robust tool that will help them send and receive files safely, easily, and quickly—and within the visibility and control of your IT department.

MFT tools must protect against not only today’s data security threats, but also the constantly evolving and proliferating cyber threats of tomorrow. Advanced antivirus and anti-malware technologies are also essential.

Globalscape Enhanced File Transfer™ (EFT™) Platform

Globalscape provides an MFT solution that secures mission-critical exchanges of data across multiple platforms for individuals, enterprises, and governments across a wide range of industries worldwide.

Our EFT platform is a robust MFT ecosystem designed to securely transfer data, giving you the:

- Operational efficiency and automation you need to meet the demands of the business
- Visibility and control through centralized management to ensure success
- A modular design that will grow with your business
- Governance and compliance
- Legacy system Integration
- Multi-layered security to keep your critical data safe

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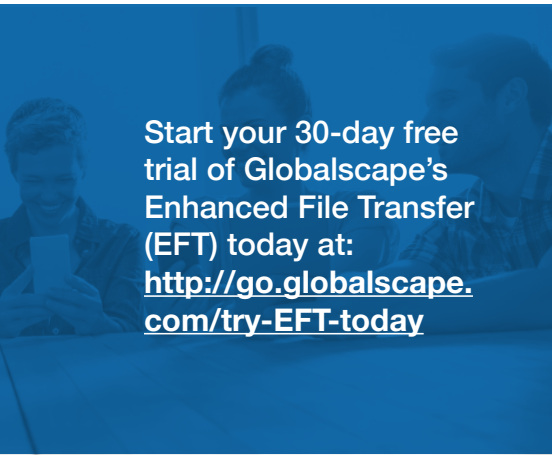

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