The UNRIVALED Guide to

DATA INTEGRATION

FOR SERVICE MANAGEMENT

a perspectium publication

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1 Introduction

"Garbage in, garbage out."

Computer scientists have known for decades that the output is only as good as the input. Yet bad data continues to frustrate more than programmers. One software provider even applies the five stages of grief (denial, anger, bargaining, etc.) to dealing with bad data[1].

In their own ongoing quest for consistent and accurate data, service-management professionals seek to integrate systems. Unfortunately, many enterprises lack the connectivity they need. Gartner estimates that 97% of business decisions are based on data of unacceptable quality[2].

A major reason for that lack of quality is that the right data is not present. Data integration means getting the right data from there to here—so that the data can ultimately be used to offer better service and inform business decisions.

What Is Data Integration?

Data integration enables mass data synchronization between a service-management application (like ServiceNow, Jira or Salesforce) and other endpoints—either in batch updates, or dynamically in real-time.

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[1] https://www.visioncritical.com/blog/grieving-bad-data

[2] https://www.gartner.com/en/risk-audit/trends/audit-hot-spots

Connecting business applications is fundamental to automating business (and IT) processes. Often those applications will need data to be transformed to a different format as it moves between them, and sometimes the applications are different versions or instances of the same tool—but whatever the case, you need to be able to get all the right data to the right place at the right time.

Why Do Data Integration?

Data integration is all about moving data from one place to another. This often involves large quantities of data, and the integrations are typically one-way.

Data integration is necessary for a variety of purposes, including the following:

- Developing and testing with real data
- Promoting and sharing foundation data
- Populating a CMDB from external sources
- Syncing data for reporting
- Copying to a big-data framework
- Upgrading a tool or migrating to a new tool

Data integration exists because perfectly aligned data doesn't. If you're trying to get data from there to here, it's because whatever data you have with you now is insufficient.

Why Is Bad Data Such a Big Problem?

Earlier, we pointed out that the vast majority of business decisions are based on data of unacceptable quality. In fact, flawed data costs companies an astounding 20% of their revenue[3]. Why is there so much data of unacceptable quality? Here are some reasons.

1. *Unintegrated shadow IT.* A study by Symantec showed that 1516 cloud apps are in use by the average enterprise, but CIOs believe that only 30-40 cloud apps are in use by their enterprise[4]. That's a whole lot of apps in shadow IT, many of which are generating data that is not being integrated with central IT. A result of not having needed integrations is that data science teams often operate within their own divisions, performing their own analyses without considering data from other units within the organization. These siloed activities reveal an incomplete picture.

2. *Lack of a data strategy.* A survey by NewVantage Partners revealed that although 99% of executives say that data strategy is a priority, only 48% of executives have a data strategy in place[5]. Without a data strategy, much less an

[3] https://sloanreview.mit.edu/article/seizing-opportunity-in-data-quality/

[4] https://resource.elq.symantec.com/LP=4717?cid=70138000001QNHyAAO

[5] http://newvantage.com/wp-content/uploads/2018/01/Big-Data-Executive-Survey-2018-Findings.pdf

effective one, how much chance is there for having a high level of data quality?

3. *Siloed apps.* According to Forbes Insights, only 34% of executives have achieved a single view of the customer with aggregated customer data. In addition, 52% of executives say that their siloed apps impede a single view of the customer[6].

Is There Hope?

Bad data is a plague. Chances are that your company regularly deals with the frustrations of data quality, connectivity and availability.

But so do your competitors. Bad data quality is a problem, but improving data quality opens up new opportunities. One good piece of news is that apps are continuing to move more and more into the cloud, giving companies more opportunities to integrate and improve data quality.

Whatever the purpose for data integration, the project can seem daunting. When a business tackles an integration on its own without doing all the right homework or when it purchases the wrong solution, the implementation is complex, the system performance lags, the data security is compromised, and the business is left with ongoing maintenance problems.

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[6] https://www.forbes.com/sites/forbespr/2018/06/20/new-forbes-insights-report-shows-organizations-feel-customer-data-is-siloed-and-exclusionary/#7e42a54299bc

On the other hand, the right integration solution can both maintain and advance your service management. But it is important to know what to look for.

In this guide to data integration for service management, we'll show you why companies integrate data, what a good data integration looks like, and how you can maintain the health of your data-integration solution.

Yes, companies integrate data for a variety of reasons. And we'll get to those soon enough.

But in the end, you'll want to define why **you** want to integrate data. Almost certainly, you have encountered a business need that prompted you to think of data integration. What is that business need? Has slow performance of an ITSM instance led to operational drag? Do you face the risk of data loss during an upgrade? Start with the end in mind. What do you imagine the integration looking like in your organization?

We invite you to browse over the various data-integration use cases in this chapter. It may be that one will stand out as applying especially to your situation. You may even find additional ways that you can enhance service through new use cases.

Let's take a look at those use cases—reasons that companies integrate data.

Developing and Testing with Real Data

Getting up-to-date operational data to every instance you own can become difficult to customize and test with certainty. For testing and development, businesses connect their service-management tool to other instances, including sub-production/sandbox instances. When an organization has its own testing or development instance that is separate from the production instance, it reduces the risk of rollout errors.

CERN connects the production instance of its service desk to a development instance of a service desk. This replication ensures that whenever a change is made in the production instance, the development instance reflects that change. As a result, developers can build new service-catalog items with the certainty that both environments are the same.

Intermountain Healthcare was using nightly batch jobs to sync their data on users, groups, and roles from their production to their sub-production environment. Not only were the evening integrations load intensive; they were also not frequent enough. Developers working with CMDB data in the sub-production environments needed faster and more accurate views of Intermountain's data. The situation called for dynamic, real-time replication. Exchanging over 1 million records per month, Intermountain now gives its developers real-time, accurate views into its production instance so that they can operate within the sub-production environment with certainty.

Promoting and Sharing Foundation Data

Occasionally, an implementation requires that a sub-production instance or a database is used as a data staging instance for external integrations before importing into production. This

allows data to be transformed and cleaned up before loading into production. Process the data while preserving data integrity down to the same unique identifier value on the two instances.

Having recently migrated from Remedy, **Accenture** had set up a best-practices process with their ServiceNow offering to be as competitive as possible among managed service providers. This process allowed Accenture to onboard new customers consistently and effectively.

Accenture set up an integration solution to help automate the onboarding process. The speed at which Accenture could onboard new customers was a governing factor in the decisions Accenture made regarding the tools that would perform the onboarding process.

After new customers load foundation data into a provisioning tool, Accenture uses an integration solution to move the data from staging to production. With the data fields properly mapped by the customers, Accenture can onboard a new customer in a couple of days.

"As an MSP, integration is almost always involved in one of our deals. We've been able to grow this solution and scale it and not had any concerns about the overhead it takes to run this" - Jonathan Livingston, Application Architect, Accenture.

Populating CMDB from External Sources

Keep your production CMDB up-to-date with automatically discovered AWS or vSphere assets. Also discover services within EC2 using Nmap, and have those services auto-populate the CMDB.

Syncing Data for Reporting

Export your operational data to a database in a scheduled fashion, or enable dynamic sharing to get real-time changes saved out to a database that can then be queried by a multitude of reporting and analytics tools.

Companies with service desks generally have separate business intelligence (BI) tools— perhaps run by dedicated BI/analytics teams. They find that they can create more robust reports by combining service-desk data with their own data repositories and perhaps by running reports in their BI tool rather than in their service desk.

When you run reports in your service desk, your service desk tool needs to devote resources for that operation, slowing down other operations within the service desk. But what if you could integrate your service desk with BI tools dynamically so that individual changes are replicated with minimal performance impact? You could then run analytics on real-time synchronized data outside of the service desk to alleviate latency within the service desk tool.

Some organizations find that by replicating service-desk data to a reporting database or other BI tools, their BI teams can deliver custom reports more quickly or build on their existing repertoire of reporting services.

CERN uses external companies for service needs, including those for cleaning, site security, and the service desk. CERN then uses its own service staff to monitor the quality of those services, creating "quality tickets" as controls and inspections that contribute to its services data. To analyze this data beyond the capabilities of the service-desk tool and to conclude how the services are performing, CERN needed to replicate the data from ServiceNow to an Oracle database for reporting in Pentaho.

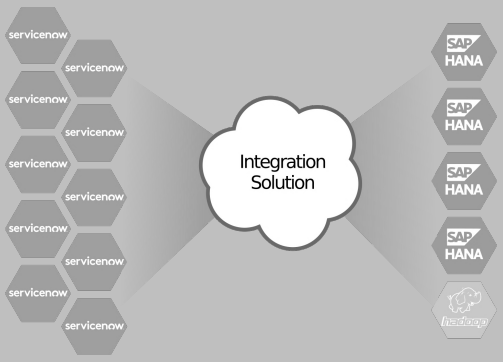
With an integration solution replicating that data, CERN runs the reports they need without worrying about creating costly performance impacts on ServiceNow. By having robust analytics at hand and newly available, CERN also created a data analysis task force to supply users with key analytics.

Copying to a Big-data Framework

Dynamically and batch publish your critical data from your CRM or ITSM SaaS applications to a cloud data warehousing solution or to your own data warehouse.

ServiceNow needed to integrate CRM data from multiple production applications into their big data environment, providing business decision makers with real-time access to essential analytics data without creating a performance impact on their production environments. The biggest challenge ServiceNow faced was scale. Their CRM solution is based on multiple ServiceNow instances, and needed real-time, simultaneous integration to their SAP/HANA and Hadoop databases.

ServiceNow's solution replicates data from 10 production instances of ServiceNow into Hadoop and 4 SAP/HANA databases for analysis by Sales, Marketing, Finance, and other departments.



Transactional data transfers feed 200+ dashboards and five predictive solutions in the big data environment. Production data alone accounts for over 10 million transfers per day—from more than 600 individual database tables—resulting in well over 2 billion records since project inception.

Because of the integration solution, the ServiceNow BI team can provide quick results to the business and is able to turn around analytics requests in a few days.

Upgrading a Tool or Migrating to a New Tool

Most new releases of an ITSM solution bring a host of newly available features that can help your organization improve its work and, ultimately, serve your customers better. Without

upgrading, you could be missing out on new ITSM features that you are already paying for.

But the thought of upgrading your ITSM instance can introduce anxiety for your IT team, especially if you have multiple integrations. The more custom integrations you have, the more likely you are to run into problems when you try to upgrade. An integration could fail to perform as it should, leading to inaccurate views and data loss, either during the upgrade or afterward.

Before starting an upgrade, ServiceNow performs a full backup of the instance so that the upgrade can be reverted if needed. But what would happen to records that were created between when this backup was created and when the production instance was reverted? A **multinational financial services company** made use of a message broker service.

Before commencing the upgrade, they set up a dynamic share, using the service. They were "publishing" records to the message broker service—in effect, using the service to store all the records as they were created. As the message broker service does not destroy the records, they had effectively created a live backup of every record that was created or updated since the upgrade commenced. Had the upgrade been unsuccessful, they could have reverted to their ServiceNow instance backup, taken prior to the upgrade window. They would have then been able to "subscribe" to the records pushed to the message broker service and recover all the data their users created during the failed upgrade window.

Which of These Use Cases Fit You?

It may be that you have a primary integration project in mind.

But the discussion of use cases in this chapter can prompt ideas for additional ways that you can integrate for better service management.

Refer to this chapter again in the future when you need ideas for how data migration or automation can enhance the work you do.

What to Look for in an Integration

To get your data where it needs to be, it's important to know what to look for.

Kick the tires and keep a discerning eye on your options for integration solutions. Integration projects require significant resources, so you'll want to opt for a solution that checks out.

Emphasis on Data Quality

A growing reliance on big data and its benefits highlights the critical importance of employing effective data governance. But only 37% of businesses have a formal framework for data governance in place[7]. The resulting inefficiency, missed opportunities, and operational drag is costly.

Your data should propagate without any loss to that data. To ensure data integrity, look for a cloud-based integration service that understands a variety of data schemas, including file attachments, reference fields, hierarchical tables, and journal fields.

Real-time Delivery

Scheduling your data exchanges for the "off" hours means working with obsolete data. In fact, if your data does not sync within seconds, it is out of date and could lead to costly errors. When you sync in real time, you work with certainty.

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[7] https://www.gartner.com/en/risk-audit/trends/audit-hot-spots

A live view of customers and business processes gives companies actionable information. IT Directors and C-level Executives, eager to keep their teams agile, do not want a view of their companies from last week or even yesterday. They want to know what is happening right now.

The result: real-time data transfer and reporting, with minimal latency, is a highly desirable service.

If you are a service provider, your customers desire real-time delivery, too. Such functions give service providers a chance to deliver extra value to customers.

"It seems like anytime anyone comes to you with a reporting requirement, they precede it with 'real-time' reporting. . . . The idea of getting the data out of ServiceNow, into our reporting warehouse somewhat seamlessly . . . that really was a market improvement step and really helped with the messaging around reporting and near real-time reporting" - Jeff Lowenthal, Enterprise Architect, Accenture.

Scalability

When dealing with automation, IT leaders are aware that a breakdown at any point in the otherwise well-oiled machine will impair the whole system. They want seamless connectivity that continues to function as the number of integration endpoints grow and as the volume of transferred data grows.

An integration solution that makes use of a message-bus architecture is not bound by the limitations of traditional web service interfaces and does not require incoming connections to

any data target or source. (You can read more about a message-bus integration in Chapter 4.)

If the amount of data to transfer were to increase dramatically, which happens for growing companies, any bottlenecks will impede that growth. Pursuing a solution that places no limits on your current or future volume of data to be sent allows growth to continue without obstacles.

Performance

Many integrations use the same communication channels as your users. So when you're moving large amounts of data in real time, your users' performance can be impacted severely.

For this reason, people often schedule integrations to occur in the middle of the night. The downside to that plan is that you can lose all the transactional benefits of real-time data exchange.

Your integration solution can preserve the performance of the production instance that it integrates with if the integration dynamically detects changes in data. Rather than relying on a batch poll, you should choose to push only the data that has changed, enabling the best possible throughput and flexibility with the least impact to the publishing application.

Security

Know where your data is going. Is it encrypted at the source to ensure protection? Does it require a key at the destination to ensure retrieval? If you purchase an integration solution rather than building one, for maximum security, pursue a solution that never sees unencrypted data.

Availability

With your integration solution, you should have the option to receive data at multiple targets after sharing once. Publish once, subscribe everywhere. Also, check on the solution's ability to function in the face of power and network outages.

Privacy

Companies are documenting processes, implementing privacy standards, and applying technology to automate and accelerate compliance relating to privacy regulations. Service management can be a complex function, central to many activities where the management of PII data is a normal part of daily life. It is exactly this complexity that integration solutions can help ease, especially through data obfuscation and deletion requests.

Throughput

A solid integration solution will copy mountains of application information, including complex objects, with negligible impacts on performance during application use. The solution should offer a real-time view of your data exchange. Look for activity monitoring that reveals performance and current status.

Bring Them All Together

Companies seek real-time, scalable delivery of data without interruptions, slowdowns, or data loss—all while maintaining high levels of security and privacy.

Keep these qualities of good integrations in mind as you look toward implementing an integration solution at your company.

You can view the same integrations through a business lens or a technical lens. Through a business lens, you see five solution models: swivel-chair integration, do-it-yourself integration, vendor consolidation, integration toolkits, and integration as a service. Through a technical lens, you see three architectural models: point-to-point integrations, hub-and-spoke integrations, and message-bus integrations.

Solution Models

Businesses approach integration through one of five solution models. Their integrations may even progress through these models in the order below, ultimately embracing the end-to-end service available in the model "integration as a service."

Swivel-Chair Integration

This approach was introduced in Chapter 3 and is used in many companies. Someone reads data from one system, and re-enters it in another. It may be transactional (like replicating an incident to create a development request) or batch (copy a snapshot of CMDB to database), but it can be inefficient, error-prone, and a risk to meeting response and resolution SLAs. This type of integration is suitable for very occasional data transfers only.

Do it Yourself

Businesses with large IT organizations often turn to this approach. Writing your own integrations (or having a consultant do it) might sound like a cheaper way of connecting to your suppliers, but anyone who has done it will tell you otherwise. Creating and maintaining custom integrations can be both

inefficient and expensive. Also, integration development is not in your development team's wheelhouse – your developers should be focusing on developing your company's competencies since that is where they will add the most value. The *do it yourself* approach is only really viable for smaller, low volume "one-off" integrations.

Vendor Consolidation

An integration model often proposed by large software vendors involves either migrating all applications to a vendor "suite" (as opposed to the more common "best of breed" approach) or using the software vendor's own integration technology. Many suite products are comprised of disparate components of self-developed, acquired, and/or open-source software. Exploring how these modules share data and operate collectively may lead to the discovery of an assortment integration approaches that are less seamless than expected.

Additionally, the ambition of software vendors to be the singular "system of record" for your process usually means that the integration technologies they create are far better at pulling data IN to their products than sending data OUT to the other repositories you may want to use.

Integration Toolkits

These came into being in the mid-2000s as an attempt to solve the enterprise integration problem. And while they might get you part of the way there, you still have to learn a proprietary language to create an integration, and you still need a team to manage the data getting from point A to point B. These toolkits are often nothing more than an ETL bus, and a collection of

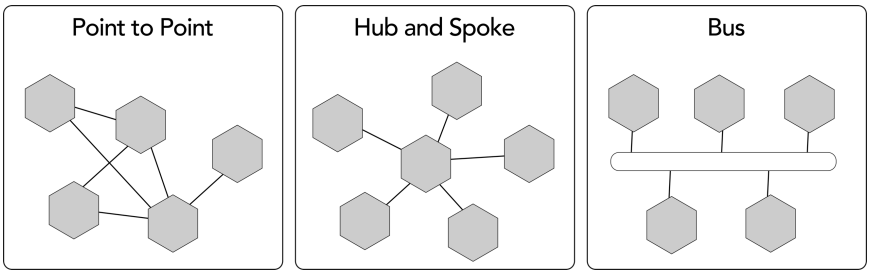
adaptors. It's like the IKEA of integration—you still have to build it yourself, just from larger pieces.

Integration as a Service

The modern approach to integration is delivered as an end-to-end service. The integration vendor takes responsibility for getting data from A to B, following rules defined by your business processes. In this model, there is nothing to write, assemble or maintain—and your integration is typically delivered as a subscription service with 24/7 support, in monitored and automated datacenters.

Architectural Models

To connect applications, enterprises historically have used solutions that follow three main information architectures.



Point-to-point Integration

In this model, data flows directly from system to system. Point-to-point integration starts simple, but becomes complicated and quickly turns into hard-to-manage "integration spaghetti" as it gets larger.

Hub-and-spoke Integration

With a hub, data flows through a central point. The hub may reformat the data, or make decisions on where to send it next. Hubs can simplify integration because they can connect systems with different data formats and data transfer methods. But hubs introduce complication because they add another place where development must take place and another runtime component.

For both of the above models, scalability quickly switches from a non-issue to a critical problem as datasets grow. Years of application use will often push data sizes into the terabytes and record counts into the 100 million+ record count range. Batch polling using SOAP starts to break down. The additional overhead not only limits transfer time but also significantly degrades application performance.

Message-bus Integration

With a message bus, all systems follow the same standards and can share in a consistent method of transferring data between the systems. Any new system can plug into the bus, as long as it meets the standards. A Message Broker Service (MBS) allows the replication of data to as many endpoints as desired with no impact or change to the endpoints. Any data source that can post to or retrieve data from the MBS can be effectively integrated to any other data source that can do the same.

The Best Model: Integration as a Service via Message Bus and a Native Application

This kind of integration offers the best performance. Whether transferring data to run reports, to keep another ITSM tool in

sync, or to fulfill other needs, businesses face the challenge of integrating data without creating significant performance impacts on the production instance of their ITSM tool.

The rest of the organization cannot simply stop what they are doing so that IT can run reports. With the right integration solution in place, a service provider can create reports or perform other data replications for customers without performance impacts to their ITSM instances.

That kind of integration solution dynamically detects changes in data. Rather than relying on a batch poll, it pushes only the data that has changed, enabling the best possible throughput and flexibility with the least impact to the publishing application.

Benefits of a Native Application

Entering data into or querying data in multiple systems is an inefficient, swivel-chair approach that requires unnecessary work.

But even many custom integrations require more labor than necessary, often requiring ongoing developer maintenance for a solution that is supposed to be "automated". For example, integration via web services often requires development on each new (or upgraded) endpoint of the integration.

A better, more automated approach is to integrate via an application native to the ITSM solution. A native application combined with a common data model makes implementation simple, drastically reducing hours of data entry, custom development, and maintenance labor.

Before implementing such an integration solution with a native application, **CDW** customers often needed to do development work on their end to complete integration projects with CDW—at price tags of $50,000 in one case. "*That's just not great when you're trying to provide a solution to someone and they get a bill like that*" says Paul Liesse, Supervisor of Managed Service Applications.

After implementing an integration solution via a native application, CDW now offers their customers integration solutions that require no extra coding by the customer. "*It's really nice to be able to go to the customer and say, we've got a solution. . . . the technical piece is super simple*".

Digital transformation acknowledges the fact that customers are empowered. They have high expectations for innovative service. But they also expect high levels of security and privacy over their data, especially after every headline-grabbing breach of data security.

With the continuing rise in cloud computing, data security is a constant concern. The high level of risk led Gartner to feature security within their five risk areas to watch for 2019[8]. Also, the rise of privacy laws, including GDPR and US laws, point to the paramount importance of keeping sensitive data private.

Public focus on security and privacy reveal their priority for your integrations, too.

Security

In addition to dealing with a general struggle for security, it's also critical that integrations are secure. Many, however, are not.

Challenges with Web Services

Web-services-based integrations to a database do not make use of any sort of security other than HTTPS transport. While there is no issue with encryption at rest in a direct web service, there is also no retry or store-and-forward capability available. Neither is there error checking and logging those errors. For web-service

[8] https://www.gartner.com/en/risk-audit/trends/audit-hot-spots

calls, you need to give users coming into your system the credentials to see your data.

Using web services for integrations also means risking data loss:

> While **Virteva** used web services for integrations, they dealt with the regular frustrations of lost data and hours of maintenance - "*We were having challenges with data drops between REST calls between instances. So, we weren't getting all the updates from our customers' instances—working endless hours on troubleshooting where something left one instance but never showed up at the other, and understanding where that gap was, and what we could do to solve that problem. And really the problem was we had no queuing functionality, right?*
>
> *"If I had a customer that I was integrating with to pull their data, . . . during that window that the instance was going through that upgrade, we had no way to queue any data that needed to be sent to them. And then send it once that upgrade was complete? We didn't have that capability*" - Matt Miller, VP of Delivery, Virteva.

Better Security Through Integration as a Service

In a push approach to integration, the system sending out the data is in control of what is sent out and where it goes. There are no system credentials required for the integration because it's not being pulled from a receiving system. A solution that is encrypted end-to-end ensures that data is secure.

Integration as a service via a native application provides encryption at the source and decryption at the target, using an encryption key provided by you. This setup provides a secure way to allow for additional data security, retry, and error management. Data security resides with the application owner, satisfying customer governance and privacy obligations. You alone view, own, and control the encryption keys for your data when you encrypt data in a native application, without the integration provider having to access those keys.

Integration as a service can also provide a redundant infrastructure of load-balanced servers and network connections, with data flow being restricted to specific regions as required. The cloud holds a message only until it is consumed by the intended data source. Usually, the data source will consume the data in less than a second.

Privacy

At the time of this document's writing, about half of US states have data-protection laws. In recent years, service-management professionals have expended even more effort toward complying with the General Data Protection Regulation (GDPR).

When implementing an integration solution, consider some ways to protect data privacy, both within ITSM systems and when in transit to other systems. Integration can help toward these efforts.

Data Obfuscation

Data obfuscation is the process of hiding original data with random characters or other data. This renders the original data unintelligible to users or other systems which do not have the

authority to view it. For GDPR, this could include names, phone number or email addresses, social security numbers, or other PII data captured as part of the service delivery process.

It's critical to remain in compliance with data-protection laws after a data-cleansing exercise. Also, when moving data to service providers or even internally, it is important to be able to identify personally identifiable information (PII) when it needs to be removed or updated.

Deletion Requests

"Right to be forgotten" is a key requirement within GDPR. If a user requests the removal of their personal data, or if workflow identifies data that is deemed inappropriate and a removal request is auto-created, IT must comply. This may involve collating PII data from multiple systems for validation by the user, so integration has to be able to bring together and standardize the required data. It's also possible that data is being held on systems at external suppliers or service providers, and that data must be included in deletion requests.

Ideally workflow should automate and enforce the request/approval process so there is an audit trail to prove completion of the deletion of the user's data.

6 Data Integration for Service Providers

If you are a managed service provider (MSP), connecting to your customers' business applications is fundamental to automating their business (and IT) processes. Often those applications will need data to be transformed to a different format as it moves into your system, and sometimes the applications are different versions or instances of the same tool—but whatever the case, you need to be able to get data to its target at the right time.

Use Cases for Service Providers

Data integration helps service providers carry out a number of business functions.

- *Migrate customer data for onboarding.* Use data integration to quickly onboard your customers, without having to worry about building or maintaining the integration. Faster onboarding = faster path to revenue.

- *Assist customers in upgrading their ITSM tool.* When customers look for help in upgrading or migrating their ITSM tool, an integration solution can ensure that no data is lost, and that the required data transformations take place during the process.

- *Consolidate reporting for customers.* Deliver benchmark reporting by consolidating data from across your entire customer set. Uncover opportunities for process improvement and other value-add services with your customers.

- *Update customer catalogs with your services.* Push your service offerings into your customers' service catalogs

with Perspectium data integration. When you offer a new service (or a change to an existing one), make it available to all your customers—from within their own ITSM tools.

- *Move between domain-separated and standalone.* Assist your customers in moving from a domain-separated ITSM instance to a standalone instance or vice-versa. An integration can enable you to migrate data including any required transformations.

- *Consolidate big data for analytics.* Get all your customer data into a big data repository for data warehousing or business intelligence analysis. Incorporate data from multiple customer sources for more meaningful analysis.

Should a Service Provider Build or Buy Data Integration?

As a service provider, those integrations relate directly to your revenue, and so they're important. But you probably have to build and manage each integration separately—because each integration may be with a different system, and there may be different "rules" that you put in place around different customers who have subscribed to differing levels of your service.

Should you build those integrations or buy them? Do keep in mind that integrations take time to build. And slowing down your onboarding means that you are delaying getting revenue from your customer, never mind the cost of the integration specialists that you have to engage to build the integrations.

Using a Native Application for Customer Integrations

Service providers emphasize domain separation, ensuring that data is not intermingled. So a domain-centric integration can keep the transfer of data secure. Using a native application allows you and your customers to avoid having to exchange and manage a collection of usernames and passwords. Such a setup with a native application makes it easier for you to pass the security reviews that your customers require.

Reporting at a Service Provider of As-a-service Solutions

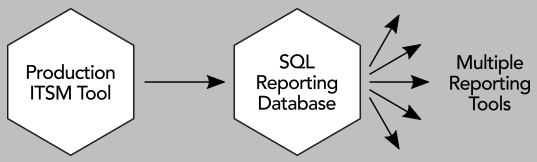
Looking to integrate service-desk instances, Virteva needed a complete view of customers for reports while preserving the solid performance of the instances.

Because of their integration solution, **Virteva** offers its customers enhanced, scalable reporting.

"We're running our SLA data, our metric data, our ticket data. We're running that all to a SQL database to do advanced reporting and analytics on that data, so we can do further trending for all of our customers that we have integrated, as well as all the additional ticket information that's in our instance. So that to me was a huge win for us to be able to bring that data down in a more real-time fashion and a more scalable fashion" - Matt Miller, VP of Service Delivery, Virteva.

Onboarding and Reporting at a Fortune Global 500 Service Provider

Sharing Foundation Data: **Accenture** integrates with customer instances to share foundation data and help automate the onboarding process. After new customers load foundation data into a provisioning tool, Accenture uses an integration solution to move the data from staging to production. More details of this use case are in Chapter 2.



Reporting: Accenture needed an integration solution to meet its reporting requirements. Accenture set up a reporting data warehouse to bring in data from both ServiceNow and other tools. Their multi-tenant environment also means that there are some tables that their customers should not access.

Many of their customers requesting real-time reporting, Accenture also sought to provide ad-hoc reports, using SQL server reporting services. "*We have to be very dynamic and limber*" says Jeff Lowenthal, Enterprise Architect for Accenture.

Accenture's integration solution now enables robust reporting for Accenture's customers, adding columns dynamically as the incident form changes with field additions.

After you decide on an integration solution, it will need to be implemented, maintained, and possibly enhanced.

Implementation

Integrations should demonstrate value rapidly, without requiring large teams of implementers at your organization.

To get up and running fast, select a solution that does not require coding or a complicated setup. Ideally, the solution is implemented as soon as you turn it on. The interface should also have familiar language and technology, enabling ease of use.

If you're shopping among vendors, look for a provider that is able to deploy subsequent integrations quickly.

As you prepare to implement, be ready to communicate some information to your integration provider. For example, at the least, have instance names available. But also, do some thinking about what you want to integrate that's more specific than just two instances or an instance to a database.

- You may plan to integrate one ITSM instance to another, but what fields do you wish to integrate? What is the field called at the source and the corresponding field called at the target?

- Will the data flow one way or bidirectionally? (Most data integrations are one way, but many service integrations are bidirectional.)

- What event triggers the data flow? What should make the integration run?

The more you can tell your integration provider in advance what exactly you would like the integration to look like, the faster and more smoothly your implementation can take place.

Maintenance

Beware of do-it-yourself toolkits or packaged integrations, which can drain your time by requiring constant maintenance. It's probably obvious that in-house integrations usually require in-house maintenance. But even companies that use platform toolkits for integration often have huge teams managing them.

A different option is to select a complete solution, fully monitored, maintained, and supported by the solution provider. Clearly, it would be expected that such integration as a service would be more costly. But shop around. You might be pleasantly surprised to find a vendor not only with an end-to-end solution but also with very competitive pricing.

Consider an example of a very large enterprise using a complete solution. ServiceNow connects their CRM system to SAP HANA. This integration facilitates over 12 million transactions every day from 600 different database tables. And it's all managed by just three people.

Continued Thriving of Integrations

You can take some simple steps to get even more value from your integration solution.

1. *Articulate the business benefits*. As companies move forward after they implement an integration, they find that analyzing and expressing business benefits in more detail prompts ideas for refining and expanding their integrations. Of course, in the face of budget pressure, articulated business benefits protect their integrations as well.

2. *Articulate the ROI of your integrations*. As you analyze the business problem and integration benefits in more detail, you are more likely to quantify the return on investment. To help you do so, consider the cost savings or new revenue made possible because of enhanced performance, stronger reporting, service continuity, new services made available, and reduced maintenance.

3. *Maintain communication with your integration provider*. If you selected a vendor for your integration rather than building the integration on your own, staying connected with your provider presents new ways to enhance business value. A complete integration solution will include the services of a customer success manager. This contact person is your advocate at the provider and a source of support for you. Also, a constantly evolving integration provider offers new developments to augment the integration possibilities for your company. Stay aware of new developments by attending webinars, following the blog, and connecting on social media.

4. *Learn new use cases*. A major advantage of using a provider's solution over a custom-built solution is that the provider has seen (and implemented) a host of integration use cases. Read online stories about those customers and ask your contact at the provider for ideas about business challenges that you face. Also,

keep an eye out for new product releases. Providers often roll out extra features and functionality that they make available to customers at no extra charge. These changes can help you meet more needs and gain new business value.

5. *Engage in customer community*. When you sign up for an IT solution, you also often get the benefit of access to a network of customers who are in your shoes. Is there an online customer community? Does the provider offer in-person events that let you meet with them and other customers? When your integrations thrive, you enhance business value for your company—and, in the process, you give solid evidence that your IT endeavors are critical to the success of your company.

8 Conclusion

While data-integration projects can seem intimidating, there are certainly paths forward. Gartner estimates that companies can eliminate 80% of data errors through adequate governance[9] ().

Companies embracing digital transformation are integrating systems across the organization. As a result, they have a competitive advantage over businesses that perform analytics within silos.

Mary Shacklett of Transworld Data speaks of the race to adopt digital transformation and to integrate systems across the organization:

> "With digital transformation in full force, there are now new market pressures to perform these integrations faster and with greater accuracy.… System integration and the associated cost, time and complexity continues to challenge companies. This process has only grown more complex with digitization and the adoption of hybrid IT architectures that now require IT to integrate different cloud platforms with its internal data center systems."

The challenge of integrating such systems overwhelms in-house IT development teams. Shacklett recommends a different approach: "Companies will never get on top of the data piling up from digitization if they expect IT to manually perform data integration. While there is a place for doing some systems

[9] https://www.gartner.com/en/risk-audit/trends/audit-hot-spots

integration 'by hand,' there are also tools in the market." A key step in digital transformation is "finding a tool that meets your particular needs"[10]

An integration solution can connect your systems securely, preserving data quality and making data available for analytics, knowledge management, and a host of other use cases. You would think twice about driving your car without accurate instruments—you shouldn't drive your business with inaccurate or out-of-date data either.

[10] https://www.cio.com/article/3322901/data-science/4-fundamentals-of-data-analytics-for-digital-transformation.html

For additional information on data integrations for service management, please visit perspectium.com

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