



Navigating the Storm:

Unveiling the Power of Digital Resilience in SaaS





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1. Introduction

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1. Introduction

Propelled by ongoing global events, business interactions worldwide are ever more remote and digital. Add economic turbulence and today's dynamic economic environment, characterized by unprecedented challenges and opportunities, is compelling organisations of all sizes to reassess their strategies, tighten budgets, and streamline operations for greater efficiency.

Many companies are responding by actively condensing their software stacks. Leaders across every industry vertical are seeking solutions that go beyond helping them weather uncertain times. Rather, they are investigating options that support true digital resilience – seeking to thrive, not just survive, in the face of adversity.

In particular, companies are paying renewed attention to their most fundamental IT systems: Customer Relationship Management (CRM) in the front office and Enterprise Resource Planning (ERP) in the back. As winners and losers will increasingly be defined by how well they can extract value from these two domains, it's critical for organisations to integrate these systems efficiently and effectively. This integration enables the fast, secure, and compliant information sharing that empowers business users to do more with less.

Until now, enterprises with the SaaS solutions Salesforce, for CRM, and NetSuite, for ERP, lacked a comprehensive, vendor-neutral resource for understanding the general integration opportunities and challenges as well as gaining a detailed and actionable roadmap for strategically, efficiently, and cost-effectively deploying an integration solution that is the right fit. Regardless of your business size or type, this whitepaper sets out to fill that gap.



2. CRM & ERP Integration: Making the Case

03 - 05



2. CRM & ERP Integration: Making the Case

As enterprises take a more discerning approach to technology investments, emphasizing not just growth but also fiscal responsibility, the C-suite's focus on value realization and cost optimization has never been more acute. This requires IT departments to take a strategic approach to software adoption that aligns with a company's overarching business and financial goals.

The World is Changing...	What Does That Mean?
Economic Turbuence	Tighter Budgets
Remote & Digital World	Condensed Software Stacks
No More Unlimited Growth	More Efficient Thinking Required

Fig 2.1: Macro view: the impact of a changing world

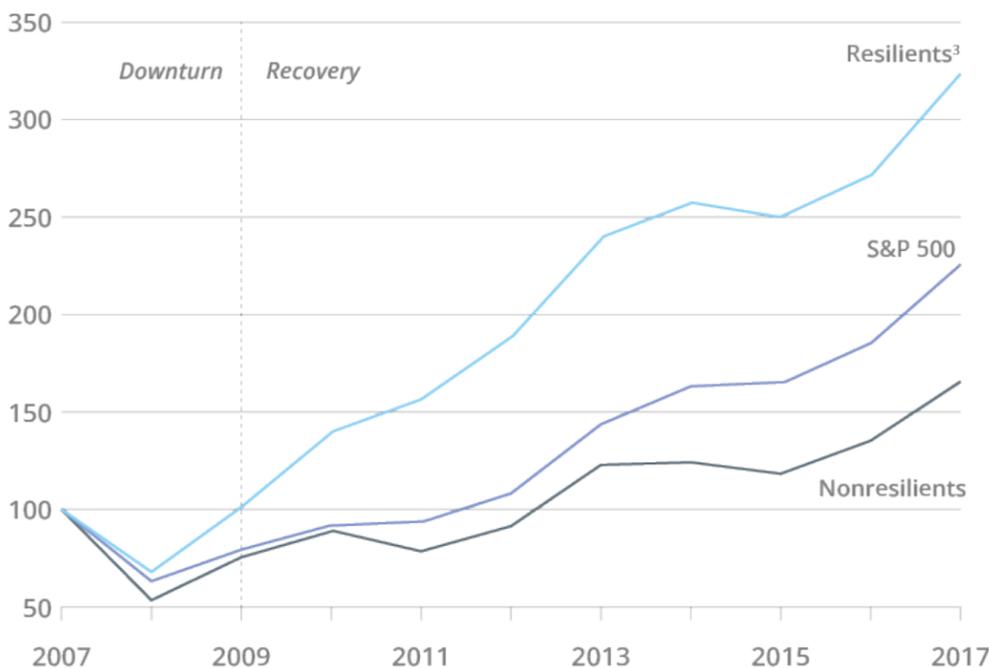
Digital Resilience as a Strategic Imperative

A company's ability to withstand and adapt to external economic and technological shocks is known as digital resilience. In a world that is increasingly defined by uncertainty, companies with a high level of digital resilience are proven to significantly outperform their non-resilient peers. In fact, recent research by McKinsey demonstrates that digitally-resilient companies have exceeded the returns of their non-resilient counterparts by nearly 165%. This underscores the critical role that digital resilience plays in determining organizational success in an era where adaptability is not just an advantage, but a necessity.

Resilient companies did better at the outset of the downturn and after.

Total shareholder returns performance

Financial crisis,¹ index
(100 = 2007 year-end)



COVID-19 crisis,² index
(100 = 2019 year-end)

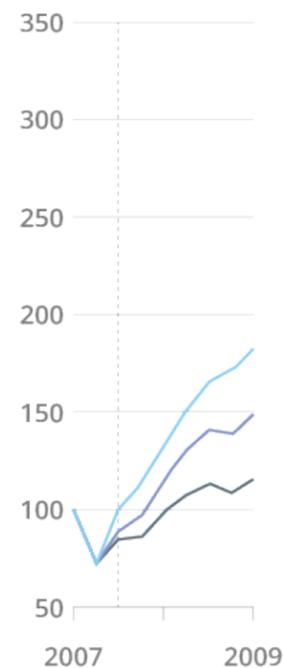


Fig 2.2: McKinsey and Company: Total Shareholder Returns

¹Resilience for sustainable, inclusive growth, McKinsey & Company, June 7, 2002

More Than the Sum of Their Parts

As CRM and ERP are the two powerhouses in every enterprise that drive operational effectiveness and play a pivotal role in shaping digital resilience, leading companies are now moving beyond utilizing them as distinct systems to interconnecting them.

Consider the example of an enterprise that integrates Salesforce and NetSuite. The company can increase revenues by enabling salespeople to use Salesforce for viewing customer payment history, which is generated by NetSuite. This provides a data-driven means for determining which customers would be the best targets for upselling or cross-selling.

At a more advanced level, this same company can adopt Salesforce AI tools that predict a specific customer's propensity to stay current on payments. This is calculated using data extracted from NetSuite across all customers. Further, salespeople can use the same tools for running more complex modeling that results in closing more targeted – and successful – deals.



Fig 2.3: Key value in tech estate

Overall, the benefits from integrating Salesforce and NetSuite can dramatically increase business value of each system separately.

Streamlines Data Flow between CRM and ERP systems, ensuring information is accurate and up-to-date in both platforms.

Increases Efficiency and Reduces Risk by automating multiple processes, freeing employees from error-prone manual tasks and enabling them to focus on more value-added projects.

Enhances Visibility with holistic, real-time customer views, improving decision-making and enhancing customer service.

Tightens Sales and Marketing Alignment as sales teams can access marketing data within Salesforce for improved targeting.

Improves Customer Experiences by enabling sales, customer service, and other teams to deliver personalized, seamless, and consistent customer interactions.

Boosts Financial Reporting and Analysis by automatically reflecting financial data from sales transactions in the ERP system, providing insights into revenue, profitability, and other key financial metrics.

Contributes to Business Scalability as seamless data flow and process automation supports increased sales volumes, enables serving a larger customer base, and reduces various operational costs.



3. Selecting the Right SaaS CRM & ERP Integration Method

06 - 08



3. Selecting the Right SaaS CRM & ERP Integration Method

Like any successful technology initiative, the first step to realizing the potential from integrating Salesforce with NetSuite is selecting the appropriate integration solution. Although this may seem remedial, the data shows otherwise.

In fact, the latest research suggests that approximately a third of enterprise expenditures on SaaS initiatives constitutes overspend², resulting business burdens that include financial, operational, and compliance challenges. Typically, overspending also causes insufficient technology adoptions, which can lead to unnecessary operational downtime and associated increases in business risk.

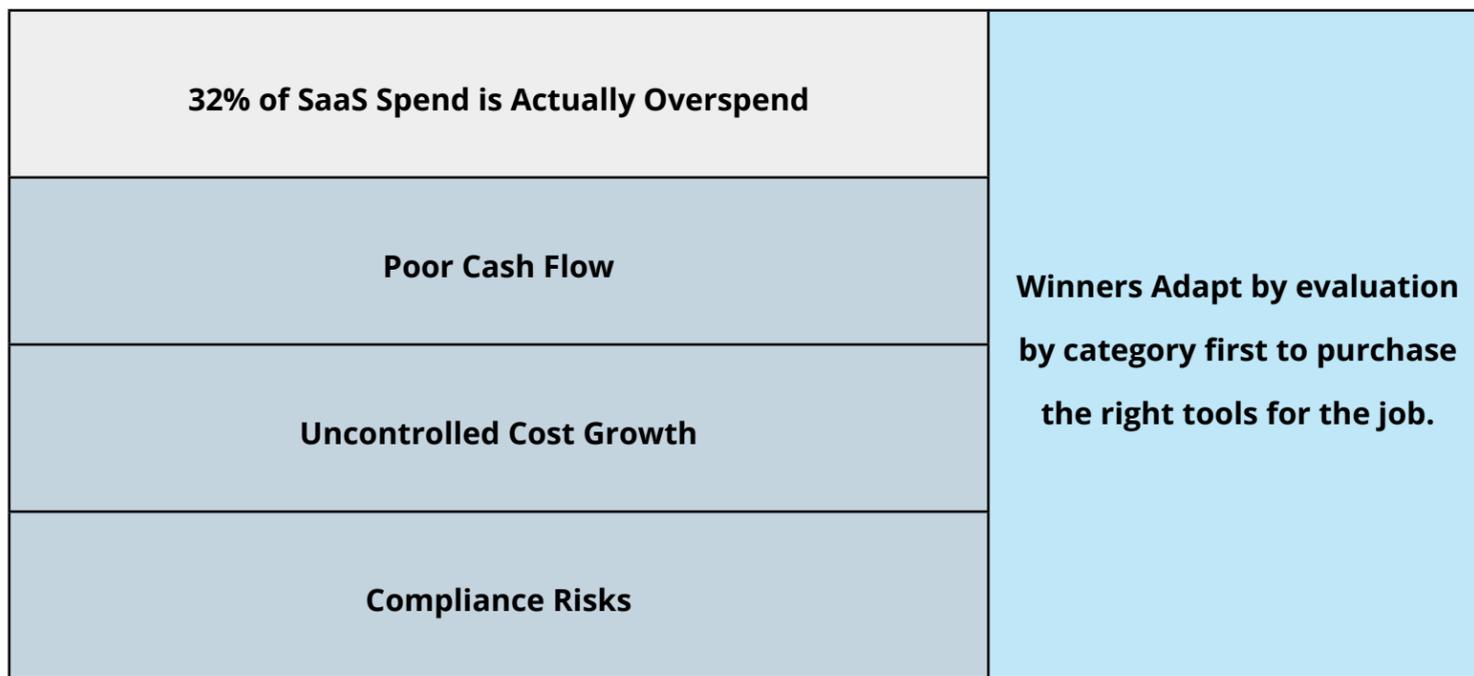


Fig 3.1: Avoiding SaaS overspend

Buy, Build, Invent Through CRM + ERP Lens

To gain the benefits from integrating CRM and ERP, without falling into the trap of overspending, it's critical to decide which of the traditional technology deployment methods is appropriate for your company. Known as "Buy, Build, or Invent," let's start by examining each deployment method, including their inherent pluses and minuses, in the context of the available options for integrating Salesforce and NetSuite.

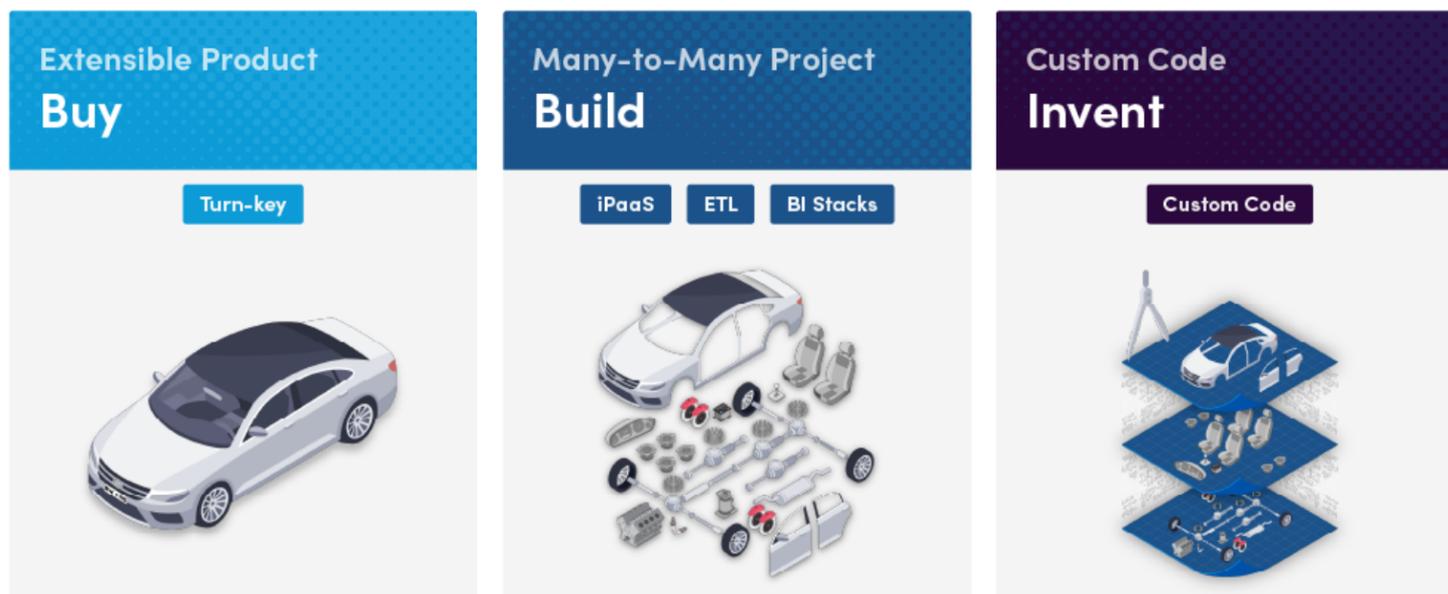


Fig 3.2: Buy, Build or Invent for integrating Salesforce and NetSuite

²Flexera 2023 State of ITAM Report, Flexera, June 13, 2023.i



Buy: Native Solution

By providing a robust, purpose-built foundation to integrate Salesforce and NetSuite, Native Solutions are attractive for streamlining integrations, reducing development overhead, accelerating time-to-value, and ensuring industry best practices are followed. Such approaches tend to be proven, fast and predictable. The best solutions in the category also offer a minimum of 90 percent of the features you'll need right out of the box (OOTB). In addition, the best of breed in this category are also both customisable and extensible. This makes them highly adaptable as they can be "extended" (customized, scaled, or both) to meet your specific needs. Further, such solutions are evolved continuously, which helps to avoid acquiring technical debt.

Still, turnkey intermediary solutions aren't engineered to meet the needs of every enterprise, as they are typically intended for interconnecting only two solutions, in this case your Salesforce CRM and NetSuite ERP. However, this simplicity makes them an excellent choice for starting your evaluation process, enabling you to determine whether this category of solution is sufficient or if your needs require an evaluation of the "Build" or "Invent" categories.

Build: iPaaS Intermediary Solution

For situations with integration requirements that surpass a purpose-built solution, an Integration Platform as a Service (iPaaS) can be a good fit. An iPaaS is typically pursued for either multi-point initiatives, where CRM and ERP are only two of the needed integrations, or situations requiring exceptionally deep customizations. Through low-code or no-code features, iPaaS solutions empower organizations to rapidly design and build highly-customized integrations.

Unsurprisingly, with high levels of customization comes added complexity. This typically means longer development cycles, potentially delaying time-to-market for various business functionalities. Additionally, as organizations delve deeper into customization, there is the risk of unintentionally deviating from best practices, potentially compromising the stability and maintainability of the resulting CRM and ERP integration. Furthermore, the reliance on low-code or no-code features may inadvertently introduce technical debt, making future modifications and enhancements more involved.

Invent: Custom Development

As the most costly and complex option, Custom Development is typically the least preferred method for creating an intermediary between SaaS solutions.

Custom code, while providing the ultimate flexibility, carries the usual substantial disadvantages. These include hiring custom developers, dependence on development resources for ongoing maintenance, and updating integrations continuously as the CRM and ERP solutions evolve. The inherent complexity of custom code also renders the developments more prone to brittleness and operational fragility. In the context of digital resilience and cost-effectiveness, custom development is often avoided due to the favorability of alternatives.





4. Aligning Integration Strategy to Business Outcomes

09 - 18



4. Aligning Integration Strategy to Business Outcomes

Organizations looking to drive value from adopting new integration technology typically seek to achieve one or more of the following business outcomes:

- 4.1 Grow revenues
- 4.2 Improve cashflow
- 4.3 Reduce costs
- 4.4 Enhance compliance
- 4.5 Improve forecasting
- 4.6 Facilitate mergers and acquisitions (M&A)

Using the “Three Pillars of Integration” framework outlined earlier in this white paper to enhance product selection, organizations face a multivariate opportunity. This white paper sets out to establish a product-agnostic methodology for optimizing this selection process. Organizations looking to build digital resilience in the mission critical nexus between their customer-edge and back-office domains seek to optimize specific business outcomes.

Achieving these business outcomes and a demonstrable Return on Investment (ROI) is a function of how organizations leverage the technology to accelerate innovation, speed up the Time to Value (TTV) of the investment, reduce the Total Cost of Ownership (TCO), drive out operational costs, enhance employee productivity and customer experience and, additionally, create new actionable insights from data held within different system boundaries.

Below we propose an approach for examining this multivariate opportunity to drive specific business outcomes. This approach has been honed from Breadwinner’s experience during a decade of developing technology solutions which integrate Salesforce with ERP, accounting and payments platforms. However, this experience is shared entirely independent of potential product selection and can be applied to an evaluation of any integration solution.

4.1 Grow revenues

Common business challenge: Growth slowing down, or even declining, as business conditions change, the economy shifts or competitors better adjust their offering. This creates a need to build sustainable competitive advantage through unique, customer-centric business processes in order to adjust to these threats to growth.

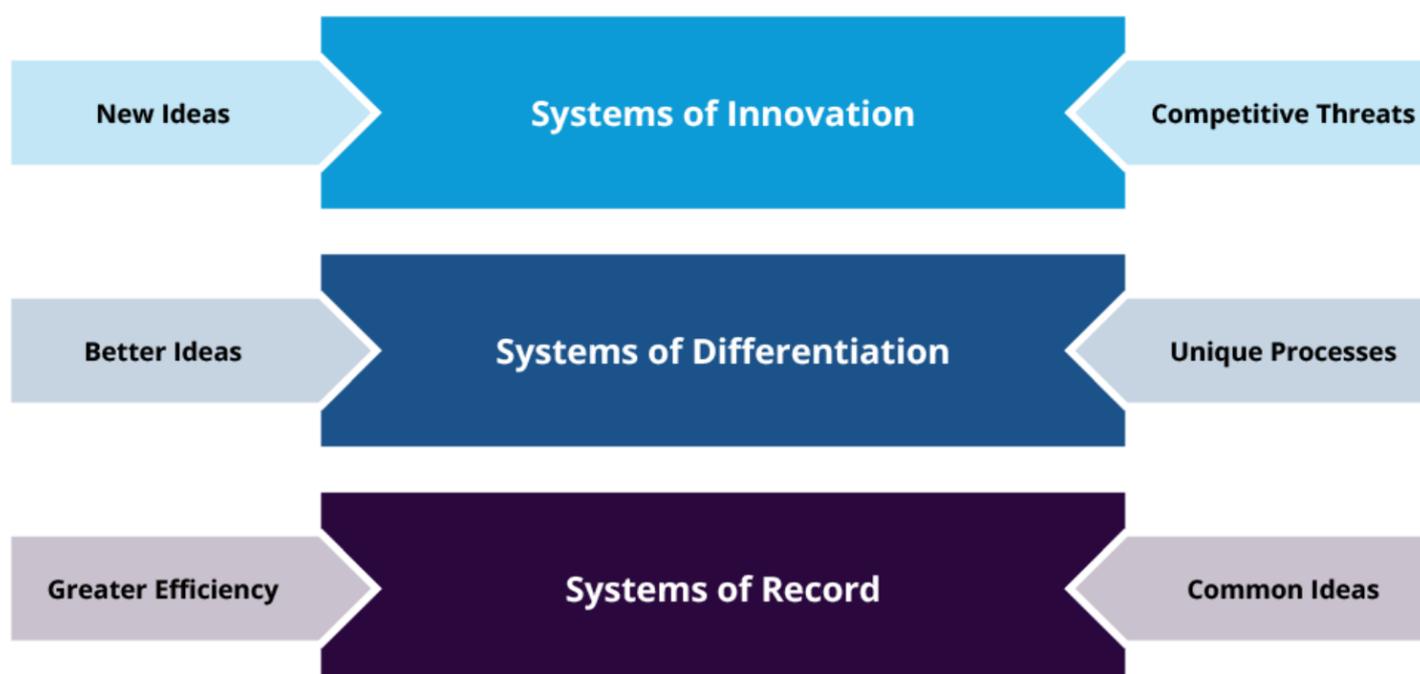


Fig 4.1: Gartner Pace Layering Model³

Gartner’s traditional Pace Layering Model provides a clear overview of the intertwined functions of different layers of an organization’s application landscape.

³<https://www.gartner.com/en/documents/1890915>



Modern application landscapes are typified by leading customer-edge technologies at the System of Innovation (SOI) level, such as Salesforce. Whilst the slower moving Systems of Record (SOR) are typified by technologies such as SAP and Oracle NetSuite.

Example Tech	Pace Layer	Purpose
	System of innovation	Where new ideas are born: <ul style="list-style-type: none"> • Dynamic business processes
	System of differentiation	Where business is run: <ul style="list-style-type: none"> • Derive competitive advantage • Configurable and customisable
	System of record	Backbone of business: <ul style="list-style-type: none"> • Slower object mode changes • Stable and defined processes

Integrating the SOI and SOR layers unlocks innovation capabilities in two ways:

1. By overlaying data from both the SOI and SOR layers to create **net-new actionable insights** from the aggregation of customer-edge and back-office data at an operational level.

Use Case Example	Data Sources	Example Solution Options	Complexity
Report on aged debts by salesperson (ie Invoice Payment History by Customer Account Ownership)	<ul style="list-style-type: none"> • Sales CRM • General Ledger invoice history 	1. Data replication of ERP data on customer-edge platform	
		2. iPaaS integrating ERP, CRM, Data Lake and BI stack	
Real time inventory availability by Customer location	<ul style="list-style-type: none"> • Sales CRM • CPQ • ERP inventory 	1. Unified CRM + CPQ with real time ERP inventory feed	
		2. Loosely coupled Event Driven Architecture (EDA) with event bus and subscriber clients	

2. By overlaying **best-of-breed AI** propensity models over combined data sources to provide **a future view of customer activity**.

Use Case Example	Data Sources	Example Solution Options	Complexity
View customer propensity to churn from Account attributes combined with payment history	<ul style="list-style-type: none"> • Sales CRM • General Ledger 	1. Data replication of ERP data on customer-edge platform with native AI models	
		2. Data Lake with proprietary AI models, multi-point integrations and iPaaS	

Organizations should consider these innovation capability tradeoffs along the following axes. While no one solution is appropriate for all organizations these are the common tradeoff vectors in innovation capabilities when binding the customer-edge to the back-office (with example solution categories positioned for illustrative purposes).

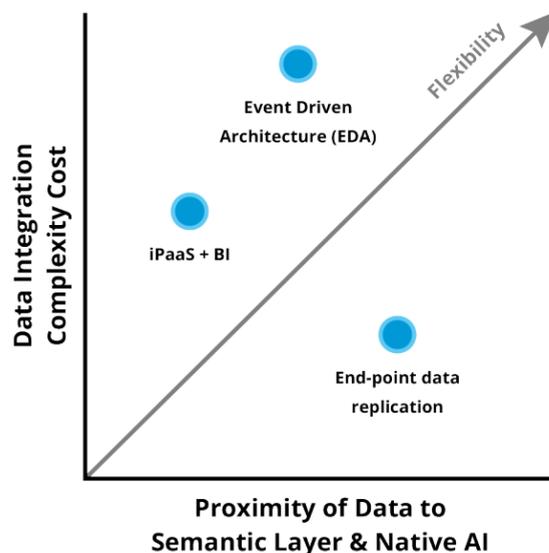
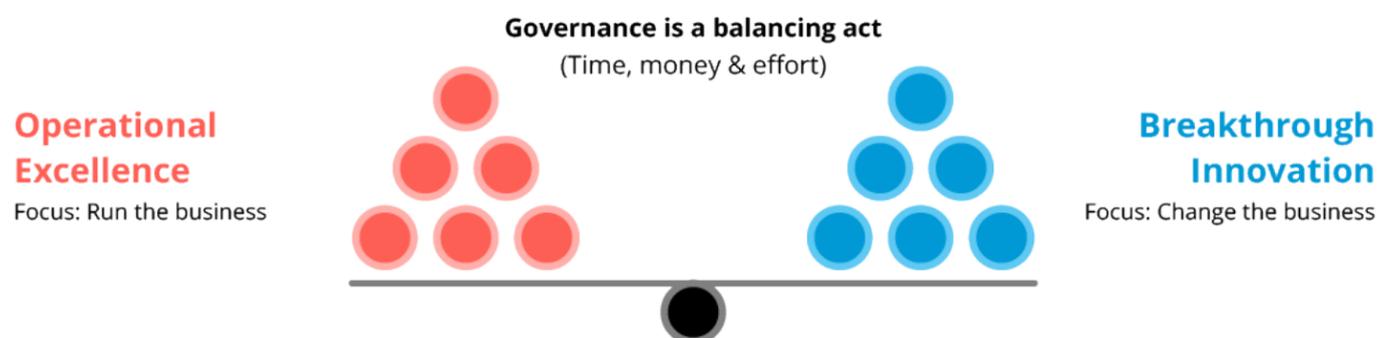


Fig 4.2: Innovation Trade Offs

“What Does Innovation Mean to You?”

“When business success is dependent on the quality of constantly-evolving customer and employee expectations, being innovative means creating experiences that deliver unmet - or even unarticulated - expectations. Innovation can meet customer needs as they exist now, but also create new marketplace opportunities that never existed before. Innovative experiences have the potential to change mindsets forever, creating new baseline expectations for every experience your customers have moving forward.”⁴



“The last best experience anyone has anywhere becomes the minimum expectation for the experience they want everywhere.”

Paul Papas, SVP, IBM Consulting

In addition to driving up innovation capabilities, organizations typically drive revenue growth through enhancing customer experience. This, in turn, is typically a function of an organization’s responsiveness to customer needs. The closer the customer data and processes are to those needs, the higher the propensity for those needs to be met.

Empowering core customer facing business domains (eg Sales, Service, Marketing and Commerce) with mission critical customer data (eg Orders Management, Inventory, Invoices, Payment History, Subscriptions etc.) is table stakes in the modern world of customer-centricity. The ability to deliver this combination of customer-edge and back-office data to the right teams, at the right time is a function of an organization’s integration capability.

The modern imperative to make drive customer experience (in B2C, B2B and B2B2C contexts) is a strategic imperative in almost every industry.

⁴Bluewolf, The State of Salesforce Annual Report 2017



4.2 Improve cashflow

Common business challenge: Liquidity issues can cause even profitable business to struggle or fail. Gaining rapid Return on Investment (ROI) for technology expenditure becomes critical to both driving cashflow and speeding up the rate at which that business change is deployed.

The ability to unleash the value of integration technology on a company's cashflow position is typically a function of the speed at which that technology investment can be harnessed.

The biggest drivers of TTV enhancement are traditionally:

- **OOTB requirement coverage:** The extent to which integration technology Out-of-the-Box (OOTB) functionality overlaps with requirements;⁵
- **Custom requirements:** The extent to which custom development is required on a given integration technology to meet requirements. TTV is heavily impacted by **both** the scale/complexity of those requirements **and** typically by the resource scarcity of niche integration development skills (in-house and outsourced);
- **Sequencing:** Whether the development effort of the endpoints (customer-edge platform and back-office tech) and the development of the integration technology can be undertaken in series or in parallel;
- **Data consolidation:** Whether combined data (eg CRM + ERP) is replicated in one of the endpoints or combined on a third platform (eg Data Lake or BI stack) using an additional intermediation platform;
- **Historical and transactional data:** The ease with which both historical data and new transactional data can be combined within a single domain; and
- **Operationalizing the change:** The speed at which system changes can be delivered to drive up employee productivity or increase customer satisfaction.

Each of drivers listed above is explored in more detail below.

OOTB vs Custom

Typically this TTV driver can be optimized by either or both of:

- Having a clear set of business functional requirements and outcomes prior to product selection, and/or:
- Working with a vendor to formally establish business value drivers for the proposed technology

For many organizations, integration development is a one-time activity. This tends to put strain on in-house technical resources or require reliance on external, third parties with niche (ie low cadence and higher cost) skill sets.

Organizations looking to speed up TTV can, therefore, look to:

- Vendors with high OOTB coverage of their core requirements; and/or
- Vendors whose product does not require a net-new set of skills for implementation and development

⁵Further detailed in Section 5.1 Technical Criteria





Sequencing

Most integrations require the endpoints (eg customer-edge platform and back-office platform) to be stabilized or fully completed before integration work can commence. Typically, integration interfaces, even using “quick start templates”, can only be commenced after all development work on both systems is complete. This bottlenecks TTV as all development effort must be completed in series.

Organizations looking to speed up TTV can, therefore, look to vendors with architectures that instantly recognize and respect changes to data structure across systems. This means that any changes to the data structure (at entity or attribute level) of the master system are replicated in on demand in the target system. The result of this architecture is that integration work can be undertaken in parallel with system development work, radically shifting the needle on TTV.

Data consolidation

Customer-edge and back-office data can be consolidated to allow for aggregated insights at either of the end points (eg CRM or ERP) or on a third platform (eg Data Lake, Business Intelligence (BI) stack).

Typically, data consolidation in one of the endpoints creates faster TTV because of the reduced system complexity. Consolidating data in an endpoint does not require:

- An additional intermediation platform, and:
- An additional Data Lake, and:
- An additional BI platform

The value of the consolidation of data on a third platform is typically a function of the number of data sources. Where only two data sources (eg CRM and ERP) are required, TTV is enhanced by data consolidation on one of the end points. Where multiple data sources need to be aggregated TTV can be enhanced by data consolidation on a third platform.

Use Case Example	Data Sources	Example Solution Options	Complexity
Report on marketing campaign to cash or payment lag per salesperson	<ul style="list-style-type: none"> • Sales CRM • General Ledger payment history 	Point-to-point integration, orchestrated from one of the endpoints, with data consolidated and aggregated in one of the end points	
Analyze Integrated Business Planning scenario models	<ul style="list-style-type: none"> • CRM • ERP • General Ledger • Data Lake 	Many-to-many integration, orchestrated by an intermediation platform consolidating data from numerous systems	

Historical and transactional data:

When evaluating TTV drivers organizations should consider their requirements relating to the needs of consolidating historical vs new transactional data.

Integration technologies which rely on third-platform interfaces or Event Driven Architectures typically trigger data exchanges or process orchestrations based on Data Change Capture (CDC) on the master system. This usually requires a two separate programmes of work to consolidate historical data and net-new transactional data:

- Creation of the interfaces, event bus (including publishers and subscriber technologies) or polling pattern, and
- A data migration programme to lift historical data into the target system

Technologies which replicate data and data structure to the target system are inherently capable of managing both historical and new transactional data without requiring two separate programmes of work.





Operationalizing the change:

Any integration technology solution requires analysis of the People, Process and Tech (PPT) overhead. The costs of managing change and operationalizing new processes is frequently overlooked. This cost drivers for this include:

- **System level:** the greater the number of intermediation platforms, data consolidation platforms etc the greater the number of specialist skilled resources required to implement, develop, manage, govern and support the change.
- **User level:** the closer the new processes and technology are to the existing user experience the lower the training requirements, the support costs and the governance overhead. Users who are able to interact with new data via their existing, familiar pane of glass require less costly change processes.

4.3 Reduce costs

Common business challenge: all businesses face the simple reality that profit is a determined by revenues and costs. In times of economic uncertainty organizations need to focus aggressively on the costs they can control. This applies to gaining efficiencies and avoiding the costs of SaaS app bloating – with studies indicating that over 30% of expenditure on SaaS is unnecessary or excessive relative to its business value.

Integration technologies can help reduce costs through a range of levers including automation efficiencies, improved customer experience and enhanced employee experience. But the costs of that technology investment itself can also be controlled through a detailed understanding of the drivers for Total Cost of Ownership (TCO). The primary drivers for integration technology TCO are set out below with considerations for managing TCO:

Costs	Considerations
Implementation & configuration	Products or solutions which include OOTB configuration within the commercial offering
Development & maintenance (in -house or 3rd party SI)	Declarative vs programmatic development paradigm Market availability of skills (common vs niche or specialist)
Governance	Reduction in number of platforms as each will have separate governance overhead
Upgrade	Seamless and automated as core feature of service vs manual
Support	Level and quality assessments
Training	Maintain users and tech teams inside a pane of glass and system with which they are already familiar vs new user interfaces and new system adoption
Licensing	Ensure license distribution is based on the needs of users to achieve business outcomes
Data Storage	Ensure fine-tuned control over data residency based at Object level syncing, Record level syncing, time based criteria and/or the ability to manage data syncing on demand
Error Handling	Surfacing errors to users in real time via a UI vs manually or programmatically interrogating log files
Compliance	Native maintenance of separation of concerns vs custom development to manage risks to compliance



In addition to reducing the TCO of the integration technology itself, all businesses face the need to drive up productivity from a constrained resource base – itself often the largest cost facing organizations. The business impact of optimization in this domain include:

- Reduction of swivel chairing
- Decrease in context switching
- Lower staff training costs
- Higher Employee Experience (EX) scores

These types of outcome are typically achieved by unifying data and processes inside the customer-edge tech stack where employees are able to manage customer-edge processes with the highest proximity to the customer.

By providing the right data to the right teams in the right pane of glass, and by automating business processes, organizations can leverage integration technology to unlock the value of their most costly and valuable assets: their people.

Integration technologies built with core OOTB functionality designed to improve workflow can provide quick, easy and cost-effective ways of unlocking this value.

4.4 Enhance compliance

Common business challenge: shifting global approaches to data regulation and security compliance have placed significant new burdens on businesses adding to cost and complexity. This creates an urgent need to ensure system landscapes respect, support and deliver on all current and future compliance use cases.

The modern regulatory and compliance landscape is typified by two features:

1. Fixed, immutable regulations like accounting standards which must be met by organizations at all times; and
2. A trend towards higher levels of regulation driven by responses to data privacy concerns, differing levels of regional response (HIPAA, GDPR, CCPA etc.) and the need to provide higher levels of corporate transparency.

When considering integration technology to support business requirements that touch finance systems, the General Ledger, Systems of Record and financial transactions, successful organizations tend to minimize risk by adopting solutions which inherently respect these compliance sensitivities. Solutions which are architected, by design, to maximize sensitivity to regulatory and compliance needs tend to reduce both cost and risk. By contrast, custom design of interfaces, by nature of the fact they are developed independently from the coal face of the business, tend to offer high degrees of flexibility but require governance oversight of each interface to ensure regulatory compliance of not only the system end points but also the behavior of the interface.

Furthermore, systems that innately respect the separation of domain concerns ensure that finance and accounting systems retain their important role in meeting regulatory requirements.



4.5 Improve forecasting

Common business challenge: the complexity of modern business processes and the technology landscape required to support them frequently leads to commercial blind spots. Businesses face the increasing risk that the ensuing weaknesses in forecasting damage profitability, reduce opportunities and increase risk – hurting top and bottom line as well as posing existential threats.

Organizations commonly look to integration technology to create new, actionable business insights from combining data previously held within different system boundaries. Net-new business value is harnessed from the ability to combine data that was previously siloed or held in systems with wildly different data structures.

A common example is the need to report on a Customer's payment history by Account or Opportunity Owner. This requires CRM ownership data to be overlaid on top of General Ledger or accounting data. Accounting systems are not typically context aware of the ownership of Opportunities or Accounts. Being able to combine data in this manner unlocks mission critical capabilities in this use case. More examples appear in the table below.

Five factors tend to drive this data to be combined on the customer-edge:

- 1. System of Innovation.** The customer-edge tends to be the natural System of Innovation where dynamic business processes, experimentation and pilot applications reside. This contrasts with the System of Record Pace Layer where higher compliance requirements (eg accounting regulations) reside alongside slower object model changes and stable, defined processes.
- 2. Semantic Layer.** The availability of simple business reporting and visualization tooling (ie a declarative semantic layer). Leading customer-edge technologies typically contain the capability to visualize data without programming (eg Reports and Dashboards with a simple, declarative user interface (UI)). This makes them the lowest cost location to combine data to harness new business insights and intelligence.
- 3. Customer Proximity.** As discussed above, the principle of customer proximity ensures that responsiveness to customer needs is a function of being able to combine data on the pane of glass where teams who work with customers do their work (Sales, Service, Marketing, Commerce).
- 4. Sharing and Visibility Architecture.** Access to the relevant Customer data tends to be controlled by the security architecture of the customer-edge technology. Harnessing this power enables customer facing teams to make decisions with the right data, in the right place, at the right time.
- 5. Compliance.** The higher compliance requirements around back-office data, eg accounting, finance or inventory management, mean that data manipulation in the back-office poses greater risk. Combining data in the customer-edge allows the separation of domain concerns to be maintained with lower risk and higher impact on business outcomes.

The following are common use case examples derived from two-way integration of customer-edge context with ERP/General Ledger data, reported via a CRM:

- Marketing campaign to cash
- Payment lag per salesperson
- Invoice history by Account Owner
- Customer propensity to default or churn based on payment history



4.6 Unlocking value from mergers and acquisitions (M&A)

Common business challenge: Economic uncertainty frequently drives business to seek inorganic growth. This generates both opportunity and risk as firms need to quickly integrate acquired businesses, reduce administrative overhead, reduce acquisition costs and maximize the ROI of acquisitions. Furthermore, businesses that are unable to integrate and combine newly acquired systems and data risk eroding their enterprise value rather than enhancing it.

Organizations acquiring new businesses are frequently faced with the challenge of combining new, disparate CRMs (Sales, Service, Marketing and Commerce) data with a unified accounting platform.

Organizations often look for a capability that enables them to quickly integrate an acquired company's data with the acquiring company's accounting and General Ledger platform. Ensuring that the integration layer is able to orchestrate in this manner without a risk of data contention is a vital prerequisite to generating value from such investments. Indeed, business M&A carries a potential risk of value erosion caused by the complexity of integrating critical data to enhance operations.

Subsidiary segmentation on the accounting platform, rather than the development of new integration interfaces for each acquired business allows for:

- Rapid, low cost deployment
- Separation of data without risk

Integration tooling that inherently respects segmentation on the General Ledger rather than relying on interfaces to be custom developed in middleware allows for high cadence implementation of M&A solutions. This is driven in two ways because inherently respecting that Accounting data segmentation:

1. Allows for data to be quickly and easily integrated without risk.
2. Enables potentially valuable insights to be observed across the segmentation boundaries. Such insights may not have been previously observable without clearly and securely separating data in the General Ledger.



5. Technical Considerations

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5. Technical Considerations

While technology investment should always be made to drive defined business outcomes, the process of selecting vendors does require an evaluation of technical criteria. The following section provides a framework for evaluating some key technical criteria including

- Matching requirements to Out-of-the-Box (OOTB) feature sets vs custom development effort
- Architecture
- Extensibility
- Integration method

5.1 Matching requirements (OOTB vs custom development)

Common technical challenge: the need for IT to deliver the widest overlap between business requirements at the lowest cost by leveraging pre-built, OOTB capability.

Modern technology stacks offer high levels of Out-of-the-Box (OOTB) capability. However, each organization has its own unique business requirements (both Functional Requirements (FR) and Non-Functional Requirements (NFR)). It is this uniqueness that creates, supports and maintains competitive advantage and market position.

The common trade off in any software purchase resides in the balance between the ability to quickly, cheaply and effectively deploy platform OOTB capabilities vs the need to customize technology to meet unique FRs and NFRs.

When considering integration technology purchases (like any software purchase) resilient organizations are able to evaluate both the technical and business case for the overlap between requirements and OOTB functionality.

In the intersection between customer-edge technology and back-office ERP, value enhancing integration technologies inherently contain a high degree of OOTB overlap with business needs. Examples often include features such as the ability to automatically manage:

- Multiple currencies
- Product and prices book synchronization
- The ability to replicate essential ERP documents (eg Invoice pdf's) onto the customer-edge
- The ability to support multiple instances / orgs of the customer-edge tech stack in tandem with a unified back-office system
- The ability to manage disparities between data structures (eg Person Accounts and Companies)
- The ability to harness subsidiary segmentation

Where these types of Functional Requirements (FRs) can be met without the need to develop custom interfaces, IT is typically able to deliver value faster to the Business.

This approach also applies to Non-Functional Requirements (NFRs) in the same manner as FRs. So, for example, successful organizations are often able to leverage the existing:

- Security Infrastructure Models
- Visibility and Sharing Architecture
- Identity and Access Management
- Models of Least Privilege Access

via existing Platform investments rather than develop new solutions to standard NFR requirements via development effort on a new intermediation platform.



The following diagram highlights the trade-offs. Successful organizations are typified by their ability to deeply understand the business value of both FR and NFR and then map them to the lowest cost, highest deployment cadence solutions that most closely match those requirements.

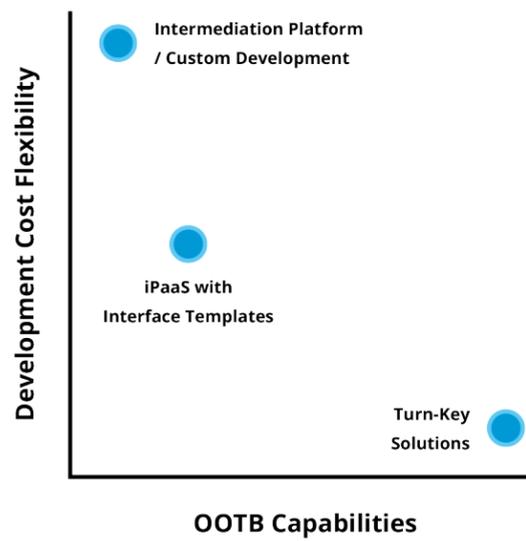


Fig 5.1: OOTB vs Custom Trade Offs

5.2 Architecture

Common technical challenge: selecting the architectural pattern that drives both short and long term business outcomes.

The single biggest interlock between business value creation and architectural principles rests on the decision of whether or not to introduce an additional intermediation platform between systems to manage and orchestrate integrations. We use the phrase “middleware” to broadly encapsulate a range of technical options including: iPaaS, ETL and full API Lifecycle Management platforms.

Leading Middleware Advantages

This category of solution has inherent benefits where one of two conditions are required:

1. When complex orchestrations of a single process, or set of processes, require orchestration across three or more systems; and/or
2. In the specialist case when API reusability will drive value in an enterprise through API lifecycle management and the internal distribution of composite API's through an enterprise API marketplace.

Leading Middleware Disadvantage

This category of solution typically requires stability in all end points before work is started on developing the interfaces in a middleware platform. This means that integration programmes or projects need to proceed, by necessity, in series. The data structure (to both entity and attribute level) require completion (or high degrees of stabilization) before work can be commenced on the middleware interfaces. The development of those middleware interfaces tends to be done by scarce, high cost resources who are deployed on a one-time basis. This makes rework costly and brittle.

Solution Optimization

Orchestrating an integration polymorphically, from one of the end points, typically means that these integration projects can be delivered in parallel because the integration configuration can be undertaken at the same time as development effort on either or both endpoints, without creating costly technical debt.



Key Principles

Successful organizations demonstrate a high degree of sensitivity to three architectural principles:

1. **System complexity** – the benefits of adding an additional intermediation platform to an organizations system landscape are outlined above. The trade offs, however, are the necessity to manage, govern, develop and maintain an additional platform with the associated costs of specialist teams and the need to develop integrations in parallel rather than in series.
2. **Separation of domains** - ensuring a clear distinction of the data and process orchestration within the bounds of a business domain. Where an intermediation platform is used that separation must be managed by the custom built interfaces rather than by leveraging the inherent capabilities of the end points. For example, each interface between a CRM system and an accounting General Ledger must be custom designed to respect financial reporting standards when middleware is used to orchestrate an integration.
3. **Brittleness** – where multiple systems are integrated using a middleware solution any change to one of the systems must be replicated in the interface. This embeds architectural brittleness into the landscape. An orchestration that automatically recognizes and responds to changes in data structure, by contrast, allows any change in the master system to be automatically available to the target system. Furthermore, brittleness can be induced by systems that produce unhandled exceptions, incomplete error messages, race conditions or unexpected outcomes.

5.3 Extensibility

Common technical challenge: the need to absorb future requirements within the capability of the selected technical solutions.

System extensibility needs to be considered along two distinct axes:

1. **Across systems:** the ability to extend business capabilities across new systems, platforms or technologies. For example, the extension of a single process across new platforms such as a future requirement to add third party “Know Your Customer (KYC)” processes to a customer onboarding process); and/or
2. **Across departments:** The ability to extend capability out to more teams or business domains who already reside on an existing system or platform. For example, adding Customer Service teams to provide after-sales care to a Sales process.

These two types of extensibility require different approaches. If future requirements include the need for a single process to be orchestrated by additional, new platforms then middleware solutions are likely to provide this type of extensibility. By contrast, where future requirements are likely to require business capabilities to be extended out to encompass new departments using existing platforms then process orchestration from within one of the end points tends to provide optimized extensibility.

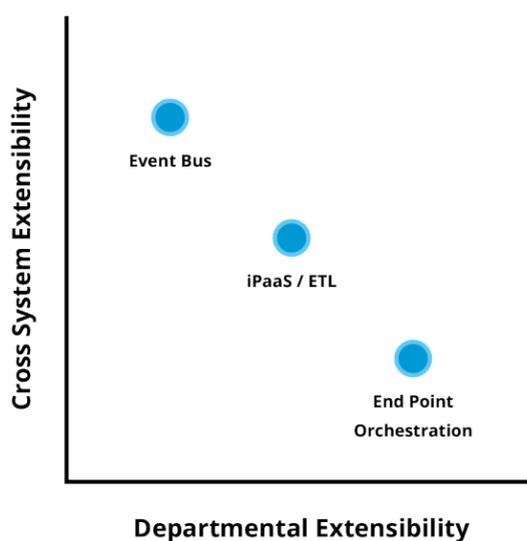


Fig 5.2: Extensibility Trade Offs



5.4 Integration method

Common technical challenge: the need to select the most appropriate integration method to deliver the required business outcomes.

Successful organizations are able to align their integration method to their desired business outcomes. Methods include the following, stack ranked from least to most technically complex:



Manual: either swivel chair or manual exchanges of data via spreadsheets. This is typically effective for low volume, infrequent data exchanges that require high levels of human oversight. This pattern is susceptible to human error and typically lacks error handling or automated roll back features but requires little investment in additional technical infrastructure.



Link back: in this pattern a reference to the data in the master system is passed to the target system. Users are able to quickly access the relevant data in the master system from a link or reference in the target system. This pattern tends to optimize for use cases where swivel chairing is a necessity but the primary business objective is to reduce friction in the swivel chairing process itself.



Data visualization: the ability to represent the data from the master system within the context of the target system (for example: an iframe within the target system allowing users to see data held in the master system). This tends to be most effective where processes do not need to be orchestrated across systems. However, for use cases where simple visibility of data is required by users of the target system is the only (and fixed) requirement this can be a cost effective method.



Data replication: using this method ensures that all of the required data from the master system is fully replicated in the target system. This enables two core capabilities:

1. The ability to fully orchestrate processes on either system through Change Data Capture (CDC) in either system. Using this method a process can be triggered in one system by a data update in another system; and/or
2. The ability to leverage the full semantic layer (Reports, Dashboards, visualisation tooling) of either system. Using this method data can be combined from two business domains to allow for granular, and sometimes new insights, derived from amalgamating two types of data.



Bi directional via single API: where system boundaries are delineated by differing metadata structures (eg XML vs JSON) a single API allowing for bi-directional transmutation can unlock business capabilities by enabling frictionless data and process exchange between systems.



Data virtualization: this pattern enables users and processes within the target system to both view and manipulate data in the master system. It has the advantage that it does not require separate interfaces to be developed between the two systems and thereby removes the need to manage, govern, support, maintain and develop an additional platform. This also obviates the need for data storage in multiple systems because data is only persisted within one system boundary.



Event driven: loose coupling systems with an Event Driven Architecture (EDA) provides high levels of scalability as well as immutability in the data exchange. However, this method requires high levels of technical sophistication with both publisher and subscriber interfaces to an independent event bus.



Business Intelligence (BI) overlay: where business value is maximised by data from multiple systems being aggregated in a single semantic layer. This method provides high degrees of flexibility where composite data from more than two systems is required to drive business insights. However, this pattern typically requires investment in both an intermediation platform and the BI system.



API lifecycle management: where an organization's business needs require extremely high levels of reusability of API's – particularly the development of composite API's which can be shared within an enterprise to accelerate development of common, repeatable processes across different departments or geographies.





6. Conclusion

7. Further Information

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6. Conclusion

The journey toward digital resilience in the realm of SaaS is fraught with challenges and opportunities. As organizations stand at the crossroads of innovation and fiscal responsibility, the strategic optimization of customer-edge and back-office applications emerges as a beacon of resilience. The era of indiscriminate software adoption is fading, giving way to a more measured and strategic approach. This white paper aims to serve as a compass, guiding organizations through the intricacies of integration options, enabling them to make informed decisions that align with their unique requirements. As businesses strive for digital resilience and operational excellence, understanding the nuanced dynamics of integration solutions becomes a strategic imperative.

7. Further Information

For further information or to contact the authors, please visit www.breadwinner.com

Breadwinner develops infinitely extensible, customisable, turn key solutions to integrate Salesforce with finance systems like ERP (NetSuite), Accounting (Xero, Quickbooks) and Payments (Stripe, Square, Braintree). Breadwinner products deliver high speed time to value by orchestrating the integration right from within Salesforce. Those solutions inherently respect the separation of domain concerns between the world's leading customer-edge Platform (Salesforce) and those finance systems.

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