Selecting the right Systems Integrator Partner for Improved Operational Performance

A SOPRA STERIA GUIDE

The world is how we shape it

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Introduction

Systems Integration Partners are the reliable, responsible unsung heroes of the IT industry. If your Systems Integration Partner is successful in the services they provide to your business your employees, customers and partners should have a seamless computing experience.

As many businesses have become more reliant on technology to enable their daily operations, selection of a successful Systems Integration Partner is crucial. We have all seen the headlines associated with major IT outages - customers not able to access their bank accounts, people powerless to pay their bills, or have the ability to interact with businesses they want to purchase products or services from.

In addition to the headline grabbling IT outages that occur due to poor systems integration many organisations are being held back in terms of their staff productivity, ability to launch new products / services to market and manage their daily operations effectively due to an overreliance on legacy systems, software and processes. This leaves them at a disadvantage in the competitive markets they operate in.

With the selection of the right Systems Integration partner enterprise organisations can integrate a variety of software systems to automate back office processes, move applications to the cloud, make it easier for employees and customers to access information through single sign on, centrally configure systems to improve IT management and lower the risks associated with IT security.

> ***In this guide Sopra Steria's System Integration experts highlight the challenges many businesses are facing with Systems Integration and why selecting the right partner is fundamental to business success.***

What is Systems Integration?

As the technology business uses has become more complex the role of the System Integrator has had to evolve and adapt to keep up with the pace of change. So what exactly is Systems Integration?

At Sopra Steria we believe Systems Integration refers to the configuration and integration of disparate systems into a cohesive functional solution. This can typically involve the following underlying systems:

Hardware | **Software** | **Extract, Transform, Load (ETL)** | **Data Solutions** | **Business to Business Integration** | **3rd Party Hosted** | **Cloud Solutions**

The integrated solution is expected to deliver value through:

- Connecting systems to drive automation and a true end to end design.
- By having connected systems which are properly understood by IT and the business, data managed on these systems can be used to help improve how goods and services are delivered, and enable IT teams to understand how co-dependent systems interact and perform.

Systems Integration is typically delivered through programmes or projects of work. Such programmes can vary in size, from having an enterprise wide impact to impacting a single business unit within an organisation. The delivery of Systems Integration programmes can be completed by a company's internal delivery teams, outsourced to a specialist external vendor or a combination of both.

Ultimately though the organisation responsible for the delivery of such a programme of work is the Systems Integrator.

Understanding the business and technology challenges associated with Systems Integration

As identified in the introduction section of this paper there are many business and technology challenges associated with Systems Integration.

Before any programme of change is undertaken or a Systems Integration partner is chosen it is important that IT teams understand where the main technology and business challenges reside. At Sopra Steria, we believe most of the business and technology challenges associated with Systems Integration fall broadly into one of the following areas:

Risk of failure - Systems Integration programmes often have to deal with high levels of uncertainty and are complex, expensive and time consuming. This means such programmes have a high risk of failure and a substantial impact in terms of cost and wasted opportunity if they do fail. A specialist Systems Integrator can mitigate the risk of failure and manage the programme in a way to assure delivery of the required outcome or bring a programme to a stop if the required benefits are not going to be realised.

Complex architectures - Large organisations can find the integration of digital initiatives hampered by architectural complexity and aggressive timescales. Today's businesses are managing increasingly complex application portfolios that span legacy and modern architectures as well as delivery models including cloud. The organisations IT estate often includes self-hosted applications in legacy mainframe environments, various applications built for classical distributed computing environments as well as the modern, event-driven architectures that are hosted in various cloud models. These disparate environments also need to support applications that depend on interaction with external data sources third parties.

Changing priorities – From our 40+ years' experience in Systems Integration, Sopra Steria understand that in many cases there is no simple means of integrating new IT solutions and partner ecosystems to enable rapid business innovation. Adding to the complexity are the new dynamics that result from the move into systems of engagement to support concepts like social computing and IoT that may render some legacy system of record architectures obsolete. The integration concepts are steadily changing from on premise Enterprise Service Bus's or interface gateways towards a service paradigm. This is where new technologies such as Integration Platform as a Service (iPaaS) and API management technologies become increasingly dominant along with the skills required to harvest benefits from these technologies.

Low systems synergy - Many organisations have to innovate at speed in today's competitive and changing market landscapes. If they fail to do so they could find themselves in a perilous position quite quickly in terms of losing market share or products/ services not being fit for purpose for customers. Because of the focus on innovating at speed, many enterprise organisations are discovering they are purchasing market leading technology solutions that do not integrate with existing services. This results in the creation of more technology problems and more manual effort to complete processes. Exactly the opposite outcome of why they purchased a particular technology solution in the first place. For example most organisations today choose to interact with their customers via mobile apps or web services. If the services they are providing via these channels lack integration it usually results in backend processes being performed manually or via expensive workarounds e.g. manual data entry and multiple steps in a manual process.

Pace of innovation - Today's business processes which are strong, dependable and secure are usually rigid and hard to change, making it difficult, to implement innovation quickly. The scale and scope that was once the greatest advantage of large companies has been replaced by the need to move at speed. Many large organisations suffer from not being able to keep up with the pace of change due to system complexity and not understanding interdependencies with other systems across the organisation. However, at the same time enterprise organisations cannot compromise on security, auditability and dependability as these all relate to their regulatory obligations and brand promise to their customers.

Long value chain - Integration across the extended value chain in which a business innovates and operates is becoming a significant challenge for business end-users, and for providers of SaaS and cloud services. In order to provide a differentiated service tailored to the individual needs of the customer, an organisation needs to exploit its data. In order to do successfully it will require System Integration points across the estate.

Varying pace of change - To fully appreciate the integration challenge, it is important to note that a typical IT organisation deals with at least four major interfaces which will be exhibiting different pace / change requirements and exposure to different technology developments:

- Business to Business interfaces, comprising all the major suppliers and consumers (internal and external) of IT services from a typical enterprise shared IT function
- Business to Customer interfaces, comprising increasing technology-enabled, service-based customer experience management
- Business to Employee interfaces, comprising the increasing support of mobile ecosystems and rapid innovation in communication, collaboration and creativity technologies as part of personal clouds
- Business to Other stakeholder interfaces for example the regulators, public authorities and business services provided by third parties such as Credit Reference Agencies

Fragmented resources - Multiple parties (internal and 3rd parties) may be working in isolation or in conflict this leads to:

- Inefficiency – repeated communications and tasks
- Duplication by each party as they compensate, resulting in redundancy (higher costs)
- Wasted effort as teams become disengaged

Disjointed Solutions – Quite often because a large enterprise organisation has been in existence for many years component parts of IT solutions do not fit together which leads to:

- Increase of poor data quality
- Lost revenue due to negative user experience, missing functionality or data content
- Low level of trust as the solution does not meet expectations
- Where systems have been quickly introduced in silos in order to quickly meet a business demand potentially means manual work round or additional work to ensure you have a Single View of Customer or you meet your reporting requirements for example
- Access and Authentication across multiple disparate systems

Limited capabilities and capacity – Due to the pressures being placed on IT teams to deliver existing Business As Usual IT services, it often means new investments in IT do not receive the care and attention required so they can start adding value back to the organisation. This usually has the following impacts on integration programmes:

- Limited resources to deliver your Systems Integration
- Inefficiencies as teams are not ready or waiting
- Progress made (or not) cannot be determined
- Colleagues do not know what is next or expected
- Lack of detailed understanding of the existing IT estate

So what should your organisation be looking for in a Systems Integration Partner?

Now we have identified the key business and technology challenges associated with Systems Integration, it is important we recognise what IT teams should be looking for in their chosen System Integrator partner.

At Sopra Steria we believe a good Systems Integration partner should display the following characteristics:

- Expert domain knowledge in all major applications, operating systems, infrastructure and cloud based technologies
- Access to highly skilled IT professionals with Integration Pattern Knowledge. The experts they employ should understand the standard and bespoke integration building blocks that are commonly used, for example Fire and Forget, Publish / Subscribe, Composed Message Processor, Pipes and Filters or Message bus to name a few. The Integration patterns can then be replicated across the wider estate for ongoing simplification
- Data Specialists to ensure data is managed in line with regulatory requirements i.e. GDPR
- Consultants who can analyse your existing Business Processes and transform them into serving your customers better
- Technical Specialists who can seamlessly migrate and integrate your estate with 3rd party hosted systems
- Strategists to help you identify and develop the right systems, processes and skills required to deliver value adding business and technical roadmaps
- Programme Management skills to build your release schedule and optimise the change lifecycle. Additionally they should have a track record in the successful delivery of programmes of change and an effective Programme Management Office
- Access to the latest testing tools and methodologies
- Commercial awareness to manage your suppliers

Sopra Steria's approach to System Integration

Understanding the skills, previous track record of success and the ability of your Systems Integration partner to deliver technically and commercially are only part of the equation.

At Sopra Steria we believe the key to successful System Integration starts with understanding your business drivers, market opportunities and technical competency, then structuring programmes of work to deliver the best possible business and technology outcomes in the timescales you need to meet.

By taking this approach Sopra Steria can make sure your technology and business strategies are aligned, and that your organisation is set up for success when in Business As Usual mode.

WORKING WITH SOPRA STERIA

Holistic Approach - **We work holistically to see the individual parts of a service in their context:**

PROXIMITY TO CUSTOMERS AND USERS
To observe, involve and see the service from the user's perspective and, through this, continuously deliver services that better meet their needs.

SPEED AND AGILITY
The ability to implement fast and get to a point of testing adjustment and learning quickly. This leads to shorter time to market, lower risks and increased value.

RESULTS ORIENTED
To measure, evalute and adjust all feature with regards to strategy and goals, before, under and after implementation.

CROSS FUNCTIONAL COLLABORATION
To involve the right people at the right time based on competence, experience and authority, crossing traditional boundaries.

Sopra Steria's Approach

At Sopra Steria we follow a hybrid approach to Systems Integration. A typical Systems Integration process we follow looks like the following:

STAGE What we do?

Assessment

Client engages with Sopra Steria to manage a Systems Integration project. During this phase Sopra Steria Systems Integration experts spend time with IT and business teams to understand what the problem is, assess the client's systems, infrastructure and processes, then decide what might be the best possible solution to their problem. At the end of this phase the client is presented with a proposal to undertake the work required.

Discovery

The Discovery phase allows our System Integration team to familiarise themselves in more detail, with the overall requirements and expectations of the 'to-be delivered' integrated system. The integration team focuses on identifying and gathering requirements which will lead to a successful project outcome including:

- APIs and interfaces
- Volumes of data
- Workflow endpoints
- End user / customer behaviour
- Protocols on each interface
- Security policies
- Privacy policies
- System administration and governance

Design

The main objective during the design phase is to conceptualise the architecture stack that will enable the system integration to take place. The key activities during this phase include:

- The high-level integration design
- Mapping the source and target systems through integration
- Selecting the necessary components
- Low level design describing the functionality of each component in detail

Build

During this phase, our System Integration team will use a range of methodologies to switch between Designing, Building and Deploying the integration solution to deliver an all encompassing integrated system. Our Agile methodologies Enable the System Integration teams to closely work with the clients in iterative cycles, to deliver the best possible integration solution. The key activities at this stage include:

- Implementing message mediation flow
- End-to-end orchestration
- Integrating different types of systems using different protocols (HTTP/S, JMS, SFTP, etc.)
- Unit tests and integration tests
- Continuous integration and continuous deployment
- Message transformation

Deploy

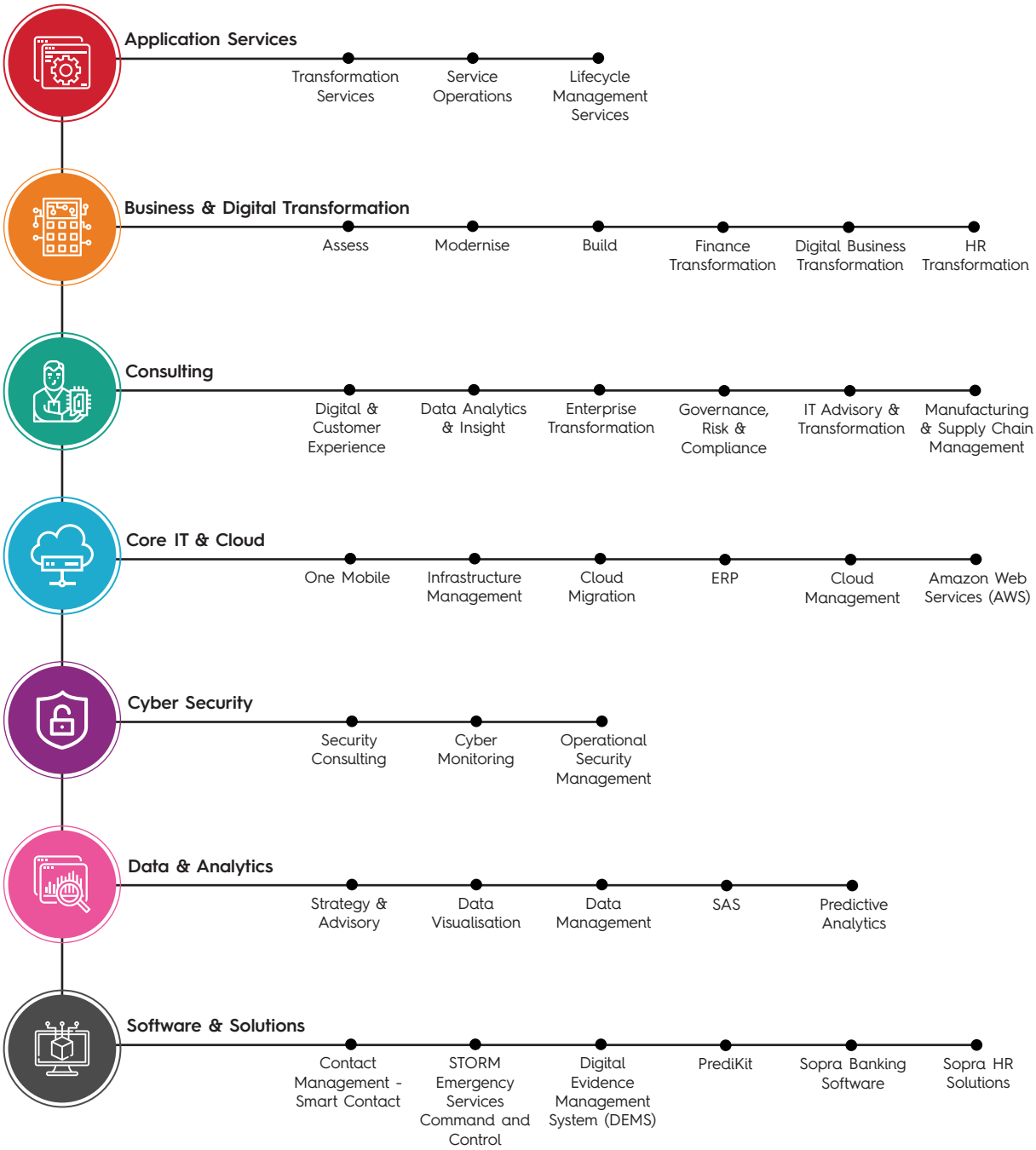
Whilst designing and implementing the integration project, our System Integration teams will also work on deploying the integrated solution. Continuing to use relevant methodologies, our expert teams can iterate the right development to best solve any issues arising from any individual stage. Whilst working on deploying integrated systems, the team concentrates on a few key activities such as:

- User Acceptance Testing (UAT)
- Quality Assurance (QA)
- Automated Acceptance Testing (AAT)
- Systems Integration Testing (SIT)
- Local development and developer testing
- Performance testing
- Pre-production and production deployment

Support

Once a newly integrated system has been deployed, and is ready to be used by the client, we will provide ongoing support and maintenance.

In terms of our track record for successful Systems Integration Sopra Steria has 40+ years' experience in the delivery of large scale IT programmes of work for a wide range of leading private and public organisations. The programmes of work we deliver for our Systems Integration clients address their most complex and critical business challenges. In the diagram below you can see the areas of our expertise across the technology landscape:



We have designed our services around Systems Integration to be scalable for any size programme of change. Additionally, Sopra Steria can take on accountability for the full or partial commercial ownership of programme delivery on behalf of the customer. The approach can be for Sopra Steria to:

- Contract direct with suppliers and Integration partners
- Manage suppliers on behalf of the customer
- Manage customer and supplier teams in a mixed model

Because we are set up to scale fast Sopra Steria can take on the accountability for the delivery of Transformation and Change programmes from inception to completion. Alternatively, we can take on any of the underlying delivery components of a programme which may have already been started without having to take ownership of the entire programme of work. This gives you as an enterprise organisation the ability to select the right specialist partners for different projects / programmes of work.

Technical Integration Provisioning

In addition to the programme delivery aspects of Systems Integration Sopra Steria can give access to highly skilled technical staff. Our capabilities in this area include:

By adopting this approach we can focus on delivering the functional requirements and configuration fulfilment required to deliver the agreed programme outcomes. From our experience this focussed approach delivers functionally operational and fully configured solutions that integrate:

- Hardware components
- Software components
- ETL components
- Data solutions
- 3rd Party hosted solutions
- Cloud solutions

By adopting the outlined approach above a successful Systems Integrator partnership will act as a transformation enabler to your business.

A Systems Integration programme will commence with clearly defined business objectives, however each business outcome could have a number of projects as pre or post dependencies. With technology innovation and business markets moving at greater and greater speeds this means priorities can alter or business conditions shift, and this requires your Systems Integrator to be constantly horizon scanning the business and technology environments to allow them to respond ahead of the curve.

Programme centric collaboration, coordination, innovation and optimisation means you will be able to exploit change management processes and respond dynamically. Sopra Steria have teams skilled in a range of IT delivery models which enables fast response to changing environments and organisational priorities without impacting the objectives of the programme.

Additionally we will work with you to make sure what we develop and deliver aligns to your business and technology roadmap. This means you will have access to the right expertise at the right time to transform and integrate your IT estate while simultaneously having the capacity to innovate with new technologies such as robotic process automation, cloud hosting and the latest concepts in UX (User Experience) and UI (User Interface). By blending functional programmes to improve IT / business outcomes today with one eye on the future, your business will be able to deliver improved customer interactions, better employee computing experiences and stay one step ahead of the competition.

The importance of technology partners

As already discussed choosing the right Systems Integration partner is only one part of the equation.

One important area that is often overlooked by many organisations is making sure their Systems Integration partner has the right relationships, skills and accreditations with all the major technology partners who have a place in their IT infrastructure.

Sopra Steria has a broad and deep ecosystem of partners whilst remaining technology agnostic. We work with Industry and technology players, from niche start-ups, major platform partners, academic experts and other industry bodies to help you define, design and deliver the right technology structure for your business. Some of our key partners can be seen in the diagram below:

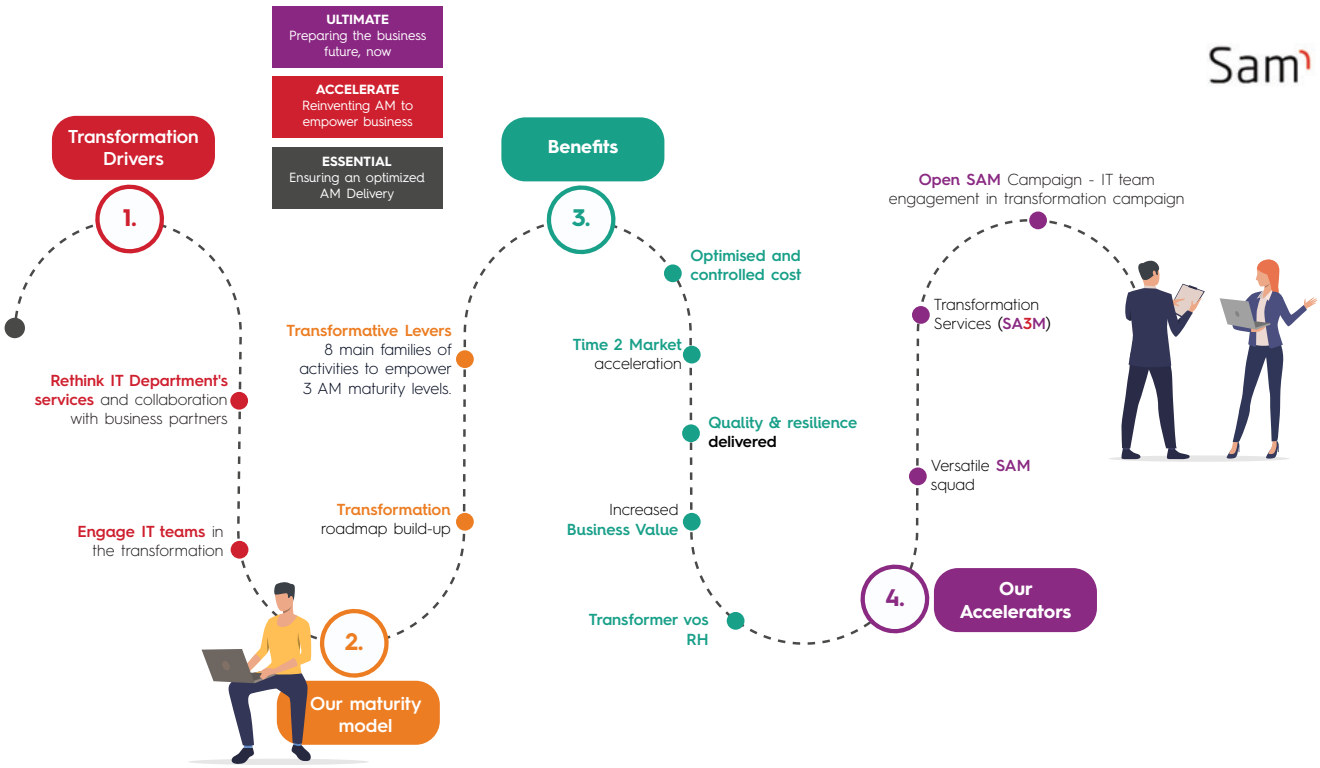
PARTNERS AND ACCREDITATIONS

Unlocking value from your business applications

As all IT professionals know giving users access to the right applications is crucial to business success. If applications fail, cannot be easily used or are not properly managed or maintained business performance will ultimately suffer. It is therefore important that your Systems Integration partner takes the time to understand your applications estate and where challenges and blockers are, and where opportunities for improvement may exist.

To help with this, Sopra Steria have developed a proven SAM (Smart Application Modernisation) approach which has been developed as a result of forty years' experience of being a successful Systems Integrator. The SAM approach will allow IT teams to assess their business and technology drivers enabling transformation of your business through our Systems Integration capabilities.

SMART APPLICATION MODERNISATION



Flash SA3M Assessment to build up customer transformation roadmap

SET UP	TRANSFORMATION DRIVERS	BUSINESS CAPABILITY AND IT LANDSCAPE	ORGANISATION AND SERVICE DELIVERY	IT STAFF ENGAGEMENT	TRANSFORMATION ROADMAP
.0	.1	.2	.3	.4	.5
Assessment framing	Business drivers identification IT / Business alignment review	Business capability review IT landscape risks assessment IT landscape business and IT gap assessment	ADM Processes assessment against SAM maturity model	IT transformation program review IT staff engagement review Collaboration, and Bottom-up innovation	Diagnostic report Ambition and future state alignment SAM Transformation levers identification Transformation journey proposition

The main aim of a Systems Integration programme is to minimise disruption and the cut over be virtually invisible to the customer. Hence, when performing IT due diligence CTOs must assure that all interfaces and delivery channels are thoroughly assessed and take into account the following:

- The full end to end Application System and Service landscape and their integration framework
- The licensing arrangements and cost of the required infrastructure, operating systems and applications
- Quality of data across the enterprise
- The format of data in the existing systems and the target systems
- Operational Business Processing, does the target systems deliver all functional requirements and allow for seamless integration across the organisation
- The impact on secondary and tertiary systems
- Is a period of dual running required?
- Is a period of Co-existence required?
- That accredited Skillsets are available to deliver the Programme
- The extent of training required for users both staff and customers
- The impact on the release schedule for other Programmes within the organisation

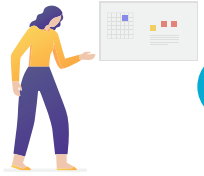
ANALYSIS OF THE IT LANDSCAPE

OBJECTIVES

- Assess IT spend
- Check IT landscape health
- Check IT Applications health
- Evaluate digital maturity
- Map Skills and competencies

METHODOLOGY

- Business architecture and investment mapping
- Risk assessment
- Systems dependencies and integration map analysis
- On demand review: cloud readiness, real time / event architecture, API, Debt UX...
- Quality attributes survey (performance, maintenance, UX - usability, technical debt, security, continuity, data quality..)



INPUT

- Business capabilities
- IT spend
- Application inventory, and integration map
- Delay, Defects & Incident number
- Application Architecture documentation
- Application audit (security / GDPR, code review..)

DELIVERABLES

- Fit / Gap analysis against business capabilities
- Business and technical debt
- Application modernization
- Quality attributes
- Technical risks

In addition to the SAM approach, Sopra Steria has proprietary frameworks and delivery patterns (iQ Business Management) in the following disciplines:

- Accelerated requirements gathering
- Architecture and detailed system design and specifications
- Data Management and Governance
- Planning commercial off the shelf (COTS) application configuration
- Programme Definition including the Business Case, Blueprint, Benefits Realisation Plan and the delivery approach via tranches and projects
- Testing (including automation)
- Managing test data
- Systems integration and configuration (functional, logical and physical)
- Governance, Reporting, Tracking, Collaborating with teams, suppliers and customers
- Development (Agile, DevOps and Waterfall)
- Deployments and implementations including Agile and DevOps methodologies
- Service Management
- Service transition into BAU application management and production support

Why should you choose Sopra Steria as your Systems Integration Partner?

- Provide delivery certainty by using the iQ Business Management framework for Systems Integration
- Reduced cost of delivery by removing initiatives that are doomed to failure, false starts and not achieving delivery outcomes
- Reduced cost of delivery with detailed tracking and monitoring of financial and delivery performance
- The use of the iQ Business Management Systems Integration framework enables to programme team to identify and mitigate the impact of a disjointed solution approach early on in delivery and thereby reducing cost
- Provide financial certainty with accurate forecasting and focus on benefits realisation
- Enables Financial Service companies and Commercial Organisations to deliver real value to their customers with increased functionality, innovation at pace and customer satisfaction

Sopra Steria are accredited with the following Service Standards

ISO20000 Service Management

ISO 10007 Quality Management Systems

ISO27001:2013 Security Management

ISO standards for BCDR:
ISO/IEC 27031:2011
ISO/IES 22301:2012
ISO/IES 24762:2008

ISO14001 Environmental Management

TickITplus, ITIL v3 2011 and PRINCE 2

HMG standards and best practice

TECHNOLOGY OPERATIONS

Sopra Steria's Business Management System (iQ) applies to all business practices, methods and processes and conforms to PRINCE 2, ITIL, Procurement and ISO/IEC 20000 requirements

How to select the right System Integration partner for your business

In the table below we have developed a checklist which IT professionals can use when selecting a Systems Integration partner:

Expertise and Background	Selection Process	In Life Management
Does your SI partner show a good understanding of the different areas of your business? Does your SI partner have the right level of knowledge of the markets you operate in? Does your SI partner fully understand the technology impact your project / programme of work may have along with associated risks? Can your SI partner provide an integrated solution across multiple products and services that are involved in your project / programme of work? Can your SI partner provide you with a consolidated view of all activities, interdependencies and impacts of changes across the business and technology infrastructure? Does the SI partner hold the right relationships, skills and accreditations with your chosen technology vendors? Does your SI partner have a proven communication methodology / approach to help you articulate changes across different groups of people at different times of the programme of work? Can the SI partner demonstrate knowledge of different business processes and how the changes will potentially impact the business? Does your SI partner have the right domain knowledge / expertise to be able to help you achieve your aspirational outcomes from the programme of work?	Has the potential SI partner created a coherent business case for the programme of work? Does the business case clearly identify the business benefits you want to achieve and how they will help you achieve them? E.g. Improved customer satisfaction, cost reductions from automation of manual processes, improved technology performance. Does the SI partner have a proven track record of successful delivery in your sector? Is the SI financially stable? Does the SI have the right scale, global reach and skilled staff available? Has the SI provided you with a risk register and do you have a plan in place should the SI not be able to meet its contractual obligations? Has the SI given you a clear roadmap, project plan and access to speak to the right people? Does the methodology, people and processes the SI will deploy fit with your organisational culture? Who are their other key clients in your market? Are they willing to reference your potential SI partner? How will the SI continue to support the solution they have deployed when it moves to an 'in life' stage?	Does the SI partner possess the right programme management capabilities? For example do they have a PMO? What is their approach to large programme governance, project planning, change management and control, vendor / contract management, frameworks for quality management, etc. Is the SI comfortable at integrating new programmes into your organisation? Do they have a clear transition process? How will the SI partner manage different work streams? How will the SI partner drive overall solution integration ensuring integrity of the solution design, interdependencies and delivery of the end-to-end solution? Can the chosen SI partner handle the overall deployment planning and execution including solution delivery for different phases of testing and rollout? How has the SI worked with other organisations who will be involved in the programme of work in the past? Has the SI partner given you a clear indication of when the project will payback in terms of benefits / outcomes for your investment? How will they keep you updated with progress vs objectives? Can the SI partner clearly demonstrate how your investment in technology and their expertise will result in improved business processes / competitive advantage.

Final thoughts

In this guide we have identified the challenges many large enterprise organisations are facing with their technology infrastruture and the importance of selecting the right Systems Integration partner.

Given the business challenges, changing technology landscape and different stakeholders involved, enterprise orgnaisations require System Integration partners that can collaborate and communicate with IT teams, business units, and technology vendors. Additionally, it is important that a Systems Integration partner has a demonstrable track record of delivery and access to the right domain and technical expertise aligning solutions with business objectives.

For businesses that take the time to evaluate their System Integration partners the advantages are clear – improved organisational performance, better customer interactions and quicker speed to market in terms of launching products and services which will help them stay ahead of the competition.

For more information about Sopra Steria's System Integration capabilities please email **pscomms@soprasteria.com** and one of our Systems Integration experts will be in touch.