CALL FOR CLARITY

Is SOA answering the need for simpler systems integration? Cliff Mills brings the response from our latest research.

For many years, IT developers and system users have been searching for effective and efficient means of integrating their systems. Very often this results in a tangle of specially crafted interfaces and connectors.

There are issues with data format definition, operations timing and synchronisation, and more subtle problems with mismatches in semantic meaning. All this has made the provision of IT application support for rapidly evolving business processes both difficult and expensive.

In an effort to address these issues, suppliers have provided a range of solutions to make the integration process simpler and more manageable. However, the underlying problems of incompatibility still remain.

Service oriented architecture (SOA) has been heavily promoted in recent years as a solution to these issues. Based on standards such as XML, SOAP and the web services stack, an SOA is meant to provide a means of achieving the necessary agility and flexibility to support rapidly evolving business processes and changing business objectives and goals. The aim is to produce modular, re-usable and replaceable software applications.

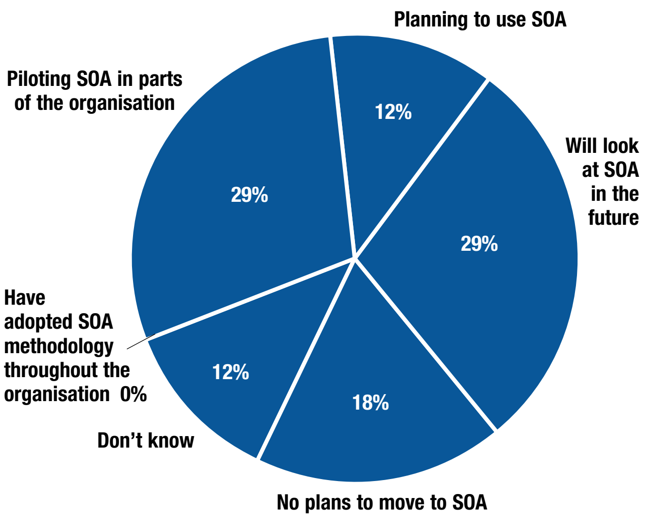
But how much has SOA really caught on?

For our latest survey on integration and SOA software, we asked readers whether their organisation has started to design and implement systems based on SOA.

Clearly this is still very much work in progress, as no company has adopted SOA methodology throughout, although 29% have started using it in selected areas with a further 12% planning to do so (see Figure 1).

FIGURE 1: SOA adoption

Has your organisation started to design and implement systems using SOA?



Source: NCC Research

This still leaves a significant number of organisations who simply intend to look at SOA some time in the future (29%) or have no immediate plans for its adoption (18%).

Possible benefits

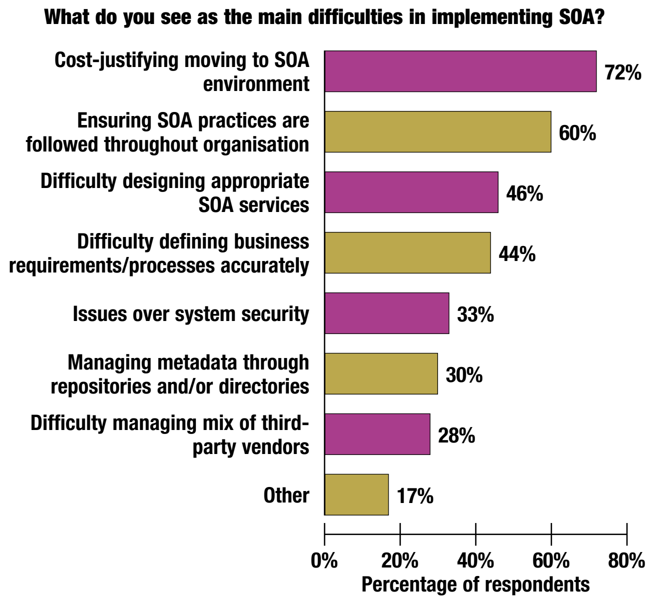
By adopting SOA methodology, companies see a range of potential benefits for their technology development. We asked them to rate the most important, using a scale of 1 to 5 where 1 is 'not important' and 5 is 'very important'.

Reducing IT duplication and redundancy is seen as the biggest plus (overall score 4.5). This is followed by the capability to be platform and technology independent (4.3) and providing better alignment between IT and business requirements (4.2).

SOA is also seen as providing easier maintenance and modifications to systems (4.1), as well as allowing organisations to leverage their existing investment in IT (4.1) and providing the capability to re-use business process services (4.1).

The biggest difficulty that organisations face when deciding to adopt an SOA approach is cost-justifying the decision – mentioned by 72% of respondents (see Figure 2, next page). SOA requires a different approach to designing and developing IT systems; and ensuring that consistent SOA practices are followed throughout the organisation is a challenge for 60% of the companies.

FIGURE 2: Barriers to SOA adoption



Base: companies implementing or planning to implement SOA
Note: respondents could choose all that apply

Source: NCC Research

Many companies (46%) say they have difficulty in defining appropriate SOA services and this goes hand-in-hand with the problem of specifying business requirements and processes accurately (mentioned by 44%).

Among the companies either using or planning to use SOA, web services is seen as the key technology for implementing a solution. Application integration suites are important for 50% of companies while industry-specific SOA models are essential for 44%.

Other technologies being deployed are the Enterprise Service Bus (22% of respondents) and vendor-specific SOA platforms (17%). But Business Process Execution Language (BPEL) has a low uptake of only 11%.

One of the key elements of SOA is to establish an agile and flexible infrastructure to support a company's business processes. By building their SOA foundation on open standards such as XML, web services and SOAP, 12% of respondents feel this agile and flexible infrastructure has been achieved 'very well' and 41% 'well'.

A further 24% see this as providing just an 'average' platform to meet their needs, while 6% see it as only 'somewhat suitable'.

Some practitioners view SOA as a common language for IT and business personnel to converse in and hopefully understand each other. But the reality doesn't match this, with the majority of respondents saying the business has 'no understanding' (35%) or 'little understanding' (18%) of the benefits of moving to SOA.

At best 35% say there is a 'medium amount' of understanding but no company feels SOA is understood 'well' or 'very well'.

We asked the organisations to identify their biggest challenges in software development. The main problem, mentioned by 72% of respondents, is linking their legacy systems to new applications. Other key issues are being able to create agile and dynamically adaptive systems (61%) and budget constraints (56%).

It is not surprising therefore that the consolidation and integration of disparate information systems within an organisation is seen as a 'very important' business challenge by 60% of companies and as important by 22%.

But while meeting the demand for inhouse integration and flexibility is difficult enough, there is now an increasing requirement to look outside the boundaries of the business and provide interactivity with client, supplier and business partner systems.

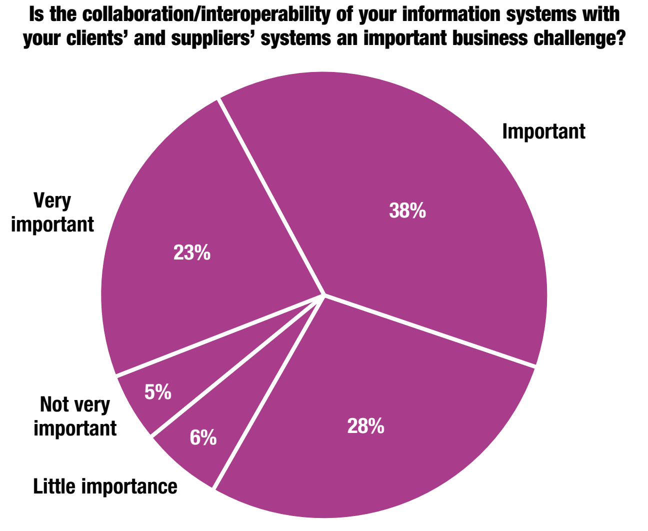
SURVEY STATISTICS

We interviewed a broad selection of companies for this year's survey into the enterprise integration market. The largest sector represented is business services, accounting for 23% of the sample, followed by the public sector (17%), banking & finance (12%) and manufacturing (12%).

The companies vary in size from those with an annual turnover of £5-10 million (17%) through to the very largest: 11% of the sample report a turnover of between £1 billion and £5 billion while 6% exceed the £5 billion mark.

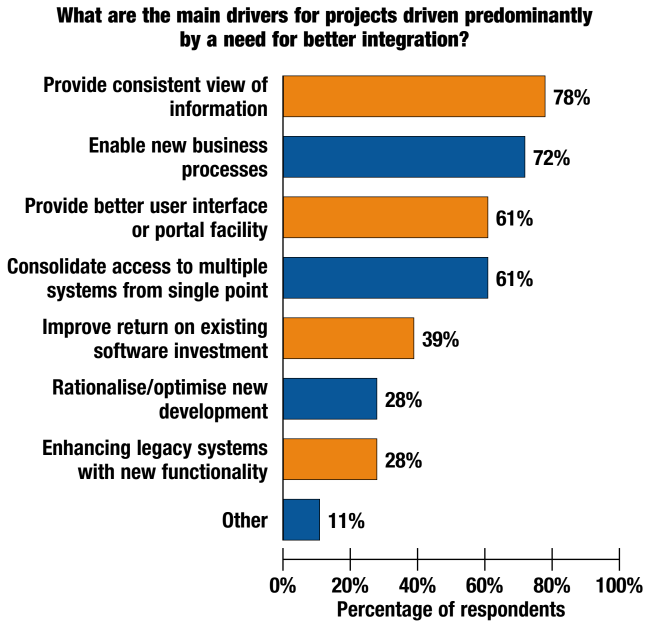
In the middle of the scale, 17% have a turnover of £10-50 million, another 16% fall into the £50 million to £100 million bracket, 28% are between £100 million and £500 million and 6% have a turnover in the range £500 million to £1 billion.

FIGURE 3: Need for links to business partners



Source: NCC Research

FIGURE 4: Reasons for integration projects



Note: respondents could choose all that apply

Source: NCC Research

In all, 23% of respondents see this as a 'very important' requirement, 38% as 'important' and 28% of 'medium importance' (see Figure 3). Only 6% of companies regard it as of 'little importance' and 5% as 'not very important' to their organisation.

The overall demand for integration projects shows no sign of abating, with 18% of companies experiencing a substantial increase, 76% an increase and 6% expecting the level to stay about the same. No-one expects integration activity to decrease.

Likewise, the demand for interoperability and collaboration projects with clients, suppliers and business partners is also showing an upturn, with 6% of companies recording a substantial increase, 77% an increase and 17% saying it has stayed about the same.

In the majority of cases (61%), integration activities happen on a case-by-case basis according to the development requirements at the time. Some organisations seem to be taking a more strategic view of their need for integration and are undertaking or planning a large enterprise-wide integration programme (22%), while others have individual integration projects underway (17%).

Among those projects predominately driven by the need for better integration, the primary catalyst – mentioned by 78% of respondents – is to provide a single consistent view of information scattered across the organisation (see Figure 4). Access to this information is also vital to enable companies to implement new or modified business processes, cited by 72% as a key driver.

Other major factors include the need to create a better user interface or portal facility, mentioned by 61% of respondents, and consolidating access to multiple systems from a single point (61%), thus eliminating the need to switch between systems to access all the required information.

Although the demand for integration projects is increasing, the budget for such software has remained stable in most cases (67%), with only 22% of companies experiencing a budget increase. However, no company is predicting a decrease in its budget.

We asked our sample to rate the importance of a number of reasons for selecting integration software, using the 1-5 scale. The most vital element, rated at 4.1, is the ability to provide business process management and workflow capabilities (see Figure 5, next page). This demonstrates the close link that now exists between integration and BPM software.

Providing a rapid development environment for integrating and enhancing existing application functionality and creating composite applications is also rated highly at 3.7. Being able to access real-time management information from business processes – so they can be continuously monitored and action quickly taken when necessary – is another desirable capability (3.5).

FIGURE 5: Key software selection criteria

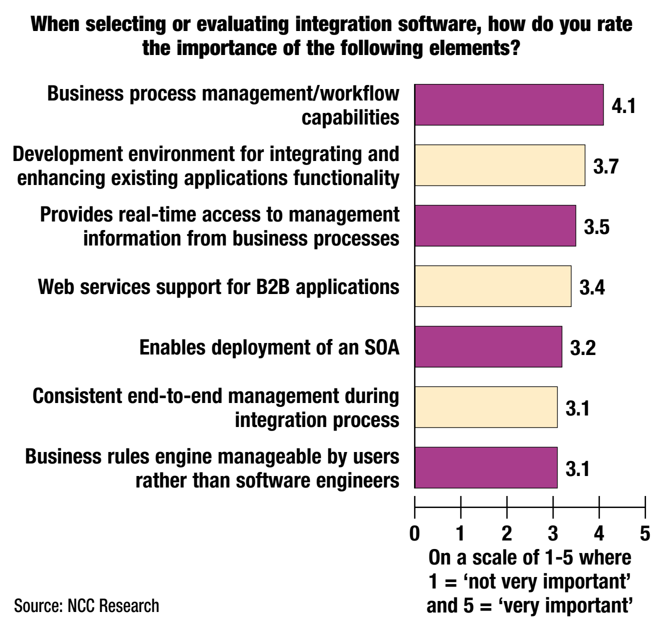
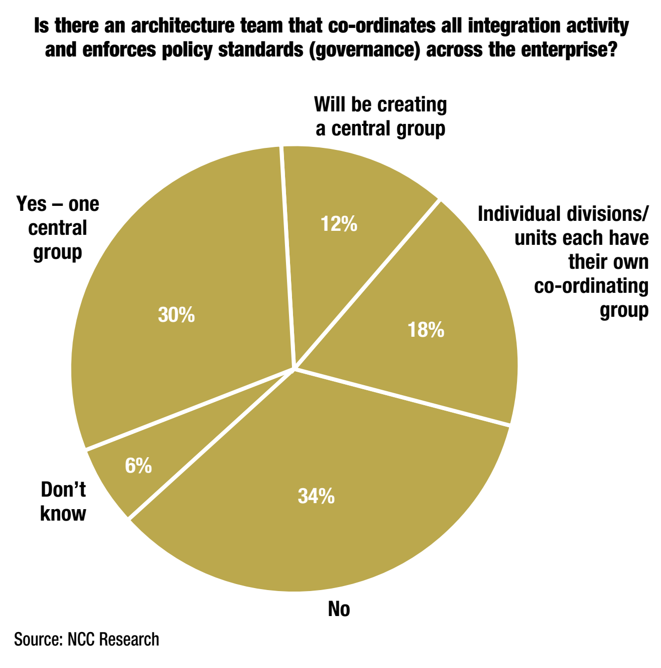


FIGURE 6: Existence of architecture team



When it comes to selecting and purchasing integration tools, the favoured approach, used by 42% of companies, is to evaluate and buy tools to meet the needs of a specific project.

This compares to 25% of companies who have a recommended set of integration tools as part of their development environment and 12% who have a recommended list of integration tools to choose from.

While integration software has evolved over the years, there are still areas that users feel need to be improved. Using the 1-5 scale, where 1 equals 'no improvement needed' and 5 equals 'great improvement needed', we asked respondents to rate the areas that have required the greatest development.

Enhancing the translation and mapping of data between systems (4.1) has demanded the most attention. This is a fundamental area for integration software but for many users it is still not providing all the necessary functionality.

Access to real-time management information from business processes (3.8) is an area that respondents would like to see improved, as is the development environment for building new composite applications (3.7).

Again, the quality of the tools to manage the whole integration process (3.6) does not always meet the necessary standards for many users. Likewise, the integration of legacy systems with new applications is another area that still needs improvement (3.5).

With the level of integration activity showing no sign of slowing down, then it needs to be well-managed across the organisation to maximise the efficiency of the operation and ensure that best practice is applied.

With the growing acceptance of SOA design principles, it will become even more critical to control the creation and re-use of services and structure the organisation to provide effective management of the whole process.

Yet only 30% of organisations have created an architecture team that co-ordinates all integration activity and enforces policy standards across the enterprise (see Figure 6).

A further 12% plan to create a central team in the future and 18% say that individual divisions or units have their own co-ordinating group. This still leaves 34% of companies with no central control in this area.

In summary, organisations are under increasing pressure to make their IT systems more adaptable and responsive to changing business requirements and to provide business information in a timely fashion. Given companies will always have a variety of different systems and applications, achieving this will require integration software of one sort or another.

As SOA principles are adopted and services become common and re-usable, then this may well reduce integration requirements. But SOA is a long-term vision that will take time and will require careful planning to deliver its anticipated benefits. Therefore, companies will need to define a clear integration strategy for the foreseeable future.

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