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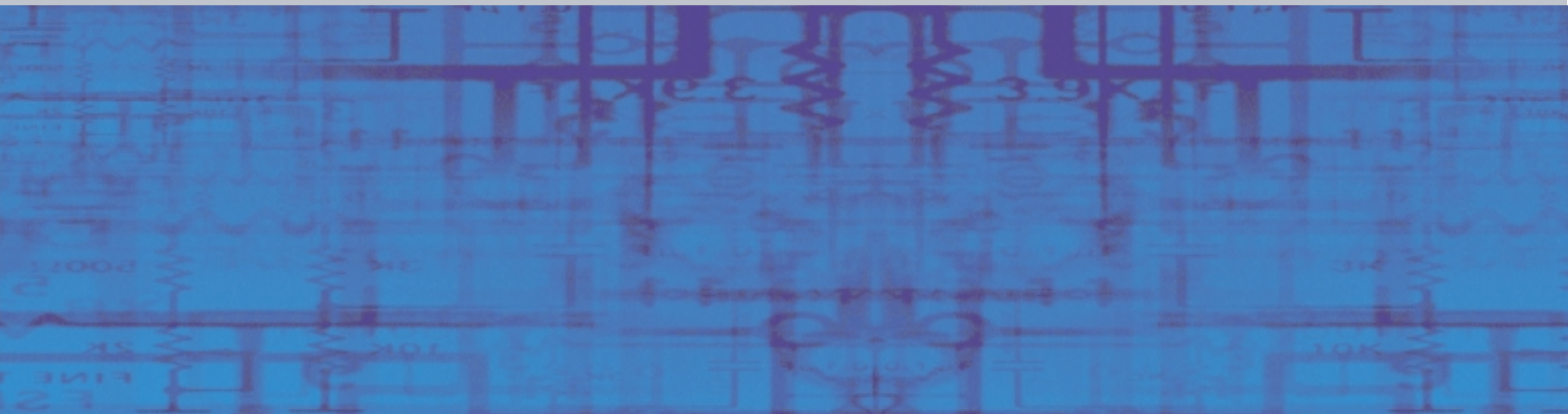
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Industry Reports

Integration Technology



In association with **INTERSYSTEMS**
from the publishers of **Conspectus**





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PMP Research asked 100 senior IT executives whether they view integration solutions as hyped or helpful. Tim Ring reports.

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Comment

Integration technology is widely regarded as one of IT's biggest growth areas in recent years - on the basis that as companies have slowed their spending on wholesale systems replacement, they have instead invested in technology that helps them link their existing systems together, to get the fullest benefit from what they already own.

But is this theory happening in reality? Are companies getting value from enterprise integration tools? And if so, are emerging integration technologies such as business activity monitoring (BAM) producing the goods?

This report answers these questions, with a range of information including market research from PMP and expert commentary from Accenture integration specialist Claudio Di Nella.



Market Research

The integration opportunity: is it real?

Independent research carried out by PMP on behalf of InterSystems has tested the attitudes of senior IT personnel across the UK to enterprise application integration. Tim Ring reports.

In recent times, the IT industry has been a breeding ground for new ideas. Some of these have been over-hyped, wasted millions of pounds and created user scepticism, whilst others have delivered real value and enabled businesses to achieve success.

Among these innovations, product managers, analysts and the press first started promoting the term enterprise application integration (EAI) in the early 1990s.

But is EAI providing value in reality and, if so, which EAI technologies are of most benefit?

A survey, carried out by research company PMP on behalf of vendor company InterSystems, interviewed 100 senior IT personnel in companies whose turnover exceeded £100 million to find out.

The study found that many companies plan to increase their spending on EAI technology. Overall, 42% of respondents anticipate an increase in the budget they devote to EAI software during this year and 11% predict a substantial increase, with just 2% projecting a decrease.

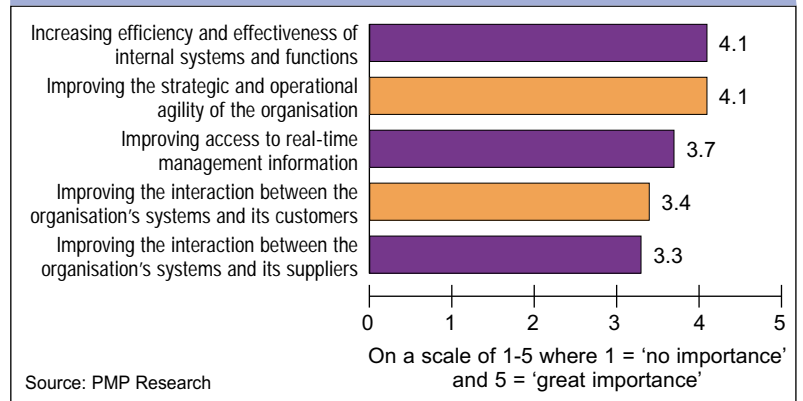
In line with this positive finding, many respondents are already spending a significant proportion of their overall IT budget on integration.

For 29% of the sample, expenditure on integration projects represents more than one fifth of their IT spending; a total of 7% claimed their companies devote 40% or more of their IT spend to this purpose while 4% spend at least half of their IT budget in this way.

These findings are supported by the sample's overall view of EAI in particular and integration in general. More than three-quarters agree that 'EAI provides real benefits to the organisation', with only 8% disagreeing.

Meanwhile, just 17% feel that 'cost generally outweighs the benefits of integration', while a total of 48% disagree with this view.

Figure 1: Main drivers for using EAI technologies



The survey found that the main drivers for using EAI technologies are more related to enhancing the flexibility and agility of the organisation's internal processes, than improving interaction with suppliers, partners or customers (see Figure 1).

Respondents feel that 'increasing efficiency and effectiveness of internal systems and functions' and 'improving the strategic and operational agility of the organisation' are the two most important drivers. Improving interaction with customers and suppliers is ranked much lower.

Underlining this finding, there is a stark contrast between the proportion of respondents who feel EAI is likely to be used in the future for process automation within their enterprise (75%), and the number claiming it will be used for process automation with their trading partners beyond the enterprise (50%).

Highlighting this emphasis on internal flexibility, 80% of the sample say a key benefit they are seeking from their EAI projects is 'to make it easier to enhance and modify systems', with 79% of the companies looking to EAI to 'make it easier to modify business processes'.

Room for improvement

While all industry sectors see EAI as providing real benefits to their organisation, the survey also identifies some key areas for improvement.

Market Research

For example, when deploying off-the-shelf adaptors for popular software suites, only 7% of the sample feel the process has been straightforward. In addition, while the multi-vendor approach is more popular than using a single source for solutions, nearly two-thirds of respondents have 'experienced some difficulty when taking EAI products from different vendors'.

Reflecting a desire for greater levels of sophistication, 26% of respondents agree with the view that 'current EAI product sets are too limited', compared with just 16% who disagree with the statement.

Also, asked how well their legacy systems integrate with their newer applications, respondents overall give this a score of 2.9 on a scale of 1 to 5, where 1 equals 'not well integrated' and 5 equals 'well integrated'.

This result is disappointing, though it does offer significant encouragement for EAI solutions vendors like InterSystems whose approach blends existing and new applications, helping companies to protect their investment in legacy infrastructure.

There is also work to be done in making people aware of the types of applications which can be delivered within an EAI framework. Only 52% of respondents are familiar with the term 'business activity monitoring', for example.

Unsurprisingly, web services is a popular application, with 45% of respondents claiming to be using them on EAI projects and a further 33% stating they may in the future.

Consultants and systems integrators (CSIs) are being used by a substantial number of the respondent companies, both for product selection and implementation. Fully 62% claim to have used CSIs to 'help in EAI product selection' and 65% have utilised them to 'implement integration solutions'.

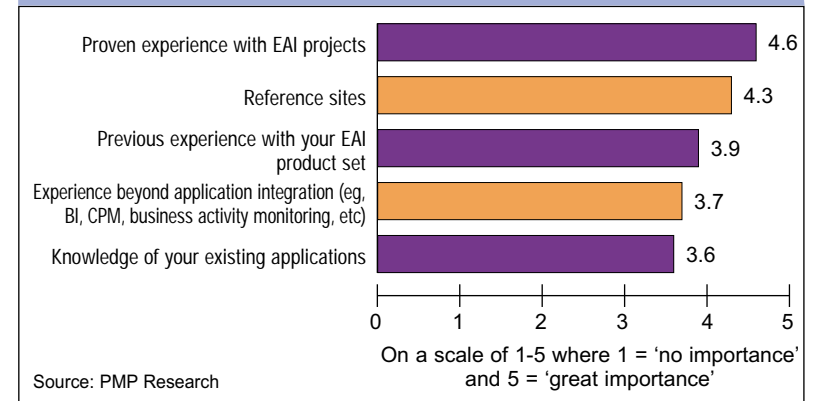
When it comes to selecting CSIs, proven experience with EAI projects is a more important factor than previous experience with a specific EAI product set or knowledge of existing applications (see Figure 2).

This highlights the widely-held perception that CSIs do not need experience of specific products in order to be effective in the EAI arena.

Conclusion

There is now a growing body of evidence that CIOs and IT directors have a renewed interest in EAI technology. A new 'use

Figure 2: Key criteria when selecting a CSI partner for integration projects



what you have' mentality dominates current thinking – in stark contrast to the 'rip and replace' strategy that characterised IT spending pre-Y2K.

There is clearly a demand for better integration of internal IT systems – and IT professionals appear to be confident that EAI can deliver the benefits sought, even though there is still an element of disappointment with the overall benefits achieved by EAI.

End users' experience is that EAI software's greatest area of improvement is the need to enhance the quality of the tool's ability to support the end-to-end integration process. This is not surprising given the market's consolidation that resulted in several 'bitter suite' marketing collections of point solutions.

EAI is firmly back on the agenda as a technology that can extract greater value from existing investments in the development of new composite applications and the delivery of business activity monitoring solutions.

Rather than being frowned upon, the winners in this marketplace will be those companies that recognise and demonstrate the most skill in delivering better EAI solutions, more quickly.

● For more information about PMP Research, please contact Neil Ferguson. Tel: 0870 908 8767. Email: neilf@pmp.co.uk.

Company Profile

InterSystems

Headquartered in Cambridge, Massachusetts, InterSystems Corporation (www.intersystems.com) has focused on serving IT organisations, professional developers, consultants and systems integrators for more than 25 years.

Its key products, the CACHE post-relational database and the Ensemble integration platform, enable users to rapidly create and integrate high-performance applications.

Over 4 million people use applications based on InterSystems' software.

The company has 23 offices in 20 countries worldwide, and provides 24x7 support for all of its products.

In 2003, it grew revenues by 40% whilst maintaining its consistent profitability.

Products

Ensemble is an architecturally consistent universal integration platform that enables rapid integration and composite application development.

Using Ensemble, consultants and systems integrators can build and deploy new business solutions for clients that utilise the functionality of existing applications, orchestrate new business processes and integrate data across the enterprise.

Ensemble incorporates the functionality of an integration server, application server, high-performance object database and a unified development and management environment in a single, architecturally consistent product.

Ensemble features:

- *Full-spectrum integration and development.* Ensemble offers a unified graphical, XML and code-based development environment that accelerates the modelling and automation of business processes for business analysts and developers – supporting the rapid, service oriented development of composite applications that utilise existing data and functionality.
- *Universal Service Architecture.* The software provides consistent object representation of disparate programming models and data formats, enabling users to utilise advanced development tools and technologies to access legacy data and

functionality as re-usable .NET or J2EE components, web services or XML.

Therefore the risk of being locked into one industry architecture (either J2EE or .NET) is eliminated, and flexibility is improved.

- *Persistent Object Engine.* A distributed, high-performance, scalable and SQL-compliant object database manages and stores all metadata, messages and process state information, without the costs and overhead typically experienced with relational databases.

Organisations can utilise object technology, as well as having real-time access to both live and previously processed messages for auditing and business activity monitoring (BAM).

InterSystems says the system provides high levels of reliability and recoverability for long-running business processes.

- *Customisable end-to-end management.* Ensemble offers customisable, extensible and integrated management and monitoring facilities which support rapid problem diagnosis and debugging.

This helps companies to optimise service levels and minimise staff burdens by automatically monitoring critical resources and generating alerts specific to any enterprise.

As a result, this can reduce operating expenses, and the potential for problems associated with using multiple tools from diverse vendors.

Market focus

A few months after its launch, Ensemble was positioned in the 'Visionaries' Quadrant in Gartner's Application Integration Magic Quadrant, and was selected by *Byte Magazine* in Spain as the winner of its 2004 Best Innovative Technology Award.

The InterSystems customer base includes organisations in the commercial and government sectors. Commercial customers and partners operate in a variety of industries, including healthcare, financial services, government, telecoms and retail.

Healthcare industry companies including Partners Healthcare, EDS, iSoft, NHS, EMIS and McKesson have made InterSystems technology the foundation for new e-business applications.

Other end users include Ameritrade, BNP Paribas, Lloyds TSB, NatWest Bank, Travel Inn, Eircom and Whitbread.

Expert Opinion

Ripe and ready

Claudio Di Nella of Accenture says integration technology is about to reach a critical stage of maturity.

The integration technology marketplace is currently characterised by expectancy and hype muddled with confusion – confusion sometimes fuelled by the vendors themselves, and the myriad acronyms that overlap in this space.

Technologies such as BPM, EAI, ETL, BAM, portals, EII and the ubiquitous web services tend to be bandied about as the cornerstones with which service oriented architectures (SOAs) are built – all mentioned in the same breath and all addressing the same categories of problems.

Partly, this is because several of these technologies have converged into more comprehensive integration suites.

But this state of affairs also reflects the fact that none of the technologies, as they existed in the traditional world, were able to make the transition out of the IT shop and into the C-level board of executives – since they have all been perceived as better, cheaper, more flexible ways of doing interfacing, but little more than that.

As technologies such as EAI evolved to meet this challenge – through approaches such as BAM (business activity monitoring) to get the business community and the COOs and CFOs engaged – the shockwave of web services rippled through the whole stack. This refocused most vendors' R&D budgets and resources onto 'next-generation' integration systems based on web services, forcing EAI technology down into the commodity stack in people's perception.

All of a sudden, technologies such as adaptors and connectors – which used to be huge money makers for vendors – became irrelevant almost overnight with the advent of SOAP.

Similarly, the open standards push implied that a lot of potentially niche vendors and new entrants could now get a piece of the action by leveraging the tiering and layering concept of an SOA. As a result, the all-encompassing proprietary integration suites were no longer seen as an attractive proposition by many customers.

All this change was happening much too rapidly, and all of a sudden web services and SOAP became the new silver bullet for integration.

Unfortunately, in making the feverish jump to web services, the value proposition for integration lost a lot of the technical principles that made previous incarnations of integration technology, like EAI, great.

Benefits such as resiliency and robustness, publish and subscribe, transactionality, support for mission-critical volumes and performance, flexibility to do real-time or batch-oriented bulk messaging, security, guaranteed delivery and other staple items of pre-web services integration architectures were now lost.

The reason is that web services implies a 'one step forward, two steps back'

scenario for integration technology as a whole, and as it stands it is a scenario that has yet to be addressed by current web services technology and standards.

This situation is mirrored on the vendor front. Convergence in the integration vendor space – predicted for some time – has been happening. A few of the vendors with bigger clout started a wave of mergers and acquisitions to broaden their offerings, such as webMethods, TIBCO and IBM bolstering their suites with additional products.

Yet at the same time, web services and SOAP-based 'lightweight' broker vendors – like Polarlake, IONA, The Mind Electric and a myriad of other previously unheard-of little names – started to mushroom all over the place, encroaching on this space.

The result was to take the market back to the pre-consolidation days, with dozens of small vendors offering technically similar but slightly different products and value propositions, all contributing to the slower-than-expected adoption of integration technology.



Claudio Di Nella: some positive technology plays



Expert Opinion

But there have been also some positive technology plays, somewhat mitigating the effect of the prevailing confusion.

An example is BAM (business activity monitoring) which is aimed at getting key business stakeholders like CFOs and COOs excited about being able to watch their business processes unfold in real time, with the ability to take immediate corrective action as and where needed.

BAM systems include advanced features such as predictive monitoring, trend correlation analysis and a whole host of tools aimed at providing almost data warehousing-like capabilities in a real-time environment with full business process awareness and visibility.

This powerful concept is fuelling demand for integration from a top-down perspective – as opposed to the traditional IT bottom-up push for it – helping to build momentum and gain additional visibility over time in terms of the importance of addressing integration requirements.

This should translate into an additional driver for businesses to consider a layered approach to integration with, in some cases, suitable roles for different technologies and tools, both SOAP and non SOAP-based.

The corollary of this is that the current limitations in the technology – and the yet-to-be completed convergence of ‘old-world’ integration and open standards, web services-based integration – are actually preventing integration from delivering the real-world results that would help gain the credibility of the business community.

This is what needs to happen if the technology is to ever get widespread adoption and truly deliver on the promises of an open standards-based concept that gives the business flexibility, speed, control, traceability, agility, performance, robustness and reliability while doing it cost-effectively and quickly.

This is not to say that integration technologies fail to deliver results today. It is more that when they actually do deliver results, it is usually when piggybacked on a large application implementation project requiring integration, or when associated to front-ending an existing application or series of applications – where the integration tools provide multi-channel access to these applications or extend enterprise integration beyond the corporate firewall and across corporations in a typical B2B collaboration.

Yet outside of those three scenarios, the implementation and delivery of integration architectures as infrastructure investment has not been widely or successfully pursued.

This leads to another important factor contributing to the current state of play: namely, corporate architecture spend and governance.

This issue extends beyond the remit of integration technology, but does have an impact on it in that it curtails the possibilities of integration in the real world – since organisations are reluctant to fund ‘infrastructure investment’ initiatives (unless there are hardware or re-platforming drivers for it) that are purely strategically focused with no tangible, more tactically visible benefits going for them.

Again, initiatives in this area that make the need for integration ‘plumbing’ that much more evident, such as BAM, should support the case for funding enterprise-wide integration architecture hub initiatives in the longer term.

Companies will be more likely, by picking these ‘higher-hanging’ fruits, to accept the broader aspects of the value proposition for integration – including all the intangible benefits and positive architectural ‘ilities’ (ie, flexibility, scalability, manageability, traceability, recoverability, etc) that companies have not had a big appetite to invest in since the dotcom bust in the late 90s.

In summary, the integration technology market is currently ripe with opportunity and almost ready to deliver the much-vaunted results in terms of business impact and existing (and admittedly hyped-up) expectations.

However, a number of things need to happen in different areas – vendors, evolution of technology standards, maturity of the corporate spending and governance rules around IT – before these benefits will become unlocked.

It will take a few months for the market to reach this stage of maturity. But it will, unquestionably, become a very interesting space over the next 18-24 months, as consolidation and technology deliver the next generation of integration that businesses are clamouring for.

● **Claudio Di Nella is a senior manager in Accenture’s Global Business Solutions Enterprise Integration Group.**
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Case Study

Ensemble pulls together major defence project

Integration technology is helping the US Defense Department streamline its massive operations.

The US Defense Department is in effect the largest company in America. With a budget of about \$371 billion, the organisation comprises more than 1.4 million people on active duty and over 670,000 civilians operating from more than 6,000 locations.

Given those statistics, it is clear that data and application integration across the Department is a huge and extremely complex effort.

The DoD has launched an initiative to improve its global supply chain. As part of that, it is piloting the Net-Centric architecture which will offer a common set of information services over a global information system. The project will test virtually all aspects of enterprise integration, including application interconnection, business process orchestration, composite application development and business activity monitoring.

Common view

US-based Chenega Technology Services Corporation (CTSC) agreed to develop and implement the pilot integration project for the Department of Defense - and the challenges involved were immediately apparent.

"The DoD is a global enterprise with information resources located on hundreds of disparate platforms worldwide and applications running in a large array of operating environments," said Jay Ferguson, director of the CTSC Joint Information Technology Centre.

"We're involved in one of the early pilots exploring Net-Centric technologies. CTSC is targeting the supply and transportation aspects of logistics with a focus on proving that Net-Centric concepts and technologies will work efficiently across a global enterprise."

CTSC selected Ensemble integration software from InterSystems in order to demonstrate the key concepts of the Net-Centric architecture.

Ensemble incorporates the functionality of an integration

server, application server, high-performance object database and a unified development and management environment in a single, architecturally consistent product that supports rapid integration and development.

This broad architecture enables Ensemble to effectively address all of the integration areas that CTSC is exploring, and to play a key role in meeting the formidable requirements of the project.

The initial objective of the CTSC project calls for providing a common view of the Defense Department's supply chain processes as they relate to 15-20 systems.

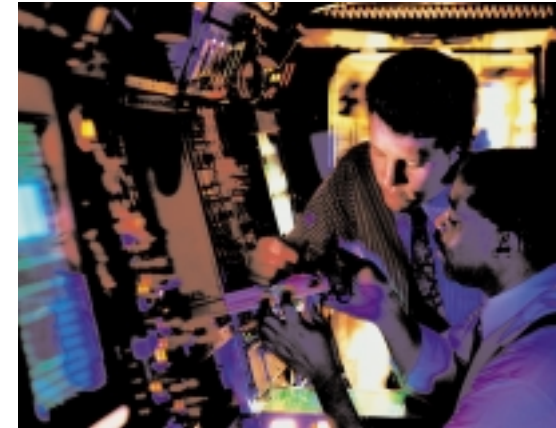
"Ensemble is being used to integrate multiple applications running on a variety of platforms, including Unix, Windows and Linux, as well as multiple data repositories," Ferguson explained.

Subsequent phases will involve developing, implementing and testing human interactions with automated processes along the entire supply chain.

"We are going to take an order from the time a request is made and track it through multiple supply chain events," said Ferguson. "The goal is to ensure that the information user knows everything possible about the order. That means monitoring where Defense Department resources are located as well as monitoring messages back and forth between systems."

As Net-Centric is implemented, the result will be shortened decision cycles as real-time connectivity makes it possible to get information to the right people at the right time and in the appropriate format.

"Based on early results, we think we'll be successful in proving the Net-Centric case," Ferguson concluded.



Chenega: exploring Net-Centric technologies

Further Information

Integration Technology

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InterSystems CACHE
Make applications faster
www.intersystems.com/cache/index/html

InterSystems ENSEMBLE
Integrate applications faster
www.intersystems.com/ensemble/index/html

To obtain your free copy of InterSystems recently commissioned survey '*The Integration Opportunity – is it real?*' [click here](#).

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