

Application Platforms

The State of Play

Jon Collins and Martin Atherton, February 2009

It is logical to wish to move common capabilities of applications into a single place, the so-called 'application platform'. But just how feasible is this given the complexities of modern IT environments, and what capabilities are seen as central to the application platform of today?

KEY FINDINGS

The principle of application platforms is clear, particularly in these times

Research study respondents agree that it makes sense to consider application platforms as a logical evolution of how IT in general, and software in particular, is commoditising. Such an approach is particularly relevant given the current emphasis on driving more efficient delivery of IT.

The current state of play is portrayed by what's seen as central to the platform

While certain elements are seen as clear components of the application platform today, others are less so – which is an indication of where the 'water mark' of such platforms lies. At the core lies the application server, with security and identity management features also seen as critical. Meanwhile, though certain capabilities (such as workflow and service orchestration) may be seen as valid elements in principle, they are not yet seeing widespread adoption in practice.

The main benefits revolve around efficient application and service delivery, through reuse

Businesses are looking to their IT departments to be responsive to their needs. Organisations that have adopted application platforms are finding themselves in a stronger position to provide more efficient application integration and delivery, which in turn has a positive impact on responsiveness. This is true for organisations that have formally adopted vendor platforms as well as those who have adopted a set of capabilities on a less formal basis.

However, the practice of deploying such a foundation is harder

The task of implementing application platforms can be onerous, particularly in IT environments that already support a diverse set of applications (which applies to most). Another significant challenge is carving out sufficient time and resource to define and deploy a platform, given that in IT, time is always at a premium.

To get started, consider if needless diversity and redundancy exists in your infrastructure

The current focus on application platforms serves as a timely prompt to step back and consider how much unnecessary diversity and redundancy exists in the infrastructure of many organisations. Practical steps forward for individual organisations will depend on where they are today, for example whether they already engage in a high degree of 'informal' component sharing or reuse, or are just starting to consider consolidation and streamlining of their application infrastructure.

This report is based on the findings of a research study completed in November 2008 in which feedback was gathered from 477 IT professionals. The work was sponsored by Microsoft and conducted in partnership with The Register, though the study was designed, executed, analysed and interpreted on a completely independent basis by Freeform Dynamics.



Introduction

This report collates the findings of a research study on application platforms and related topics, carried out in partnership with The Register during November and December 2008.

Before we get into the meat of the findings, we should be clear what we mean by an application platform. Without going too deeply into the history or philosophy of computing, a driving factor of corporate IT has involved identifying common software components which can be re-used and shared across applications, and choosing to buy these from software suppliers rather than build them from scratch. Database management systems, rules engines, user directories, transaction monitors, could all be considered as part of a 'platform' layer.

A good stab at delivering an 'application platform' was the arrival of the application server in the mid-1990's, which combined a number of the above functions. As standards and de facto practices have evolved however, it has become clear that the application server is just one element of what we could consider as the application platform today. Other elements include:

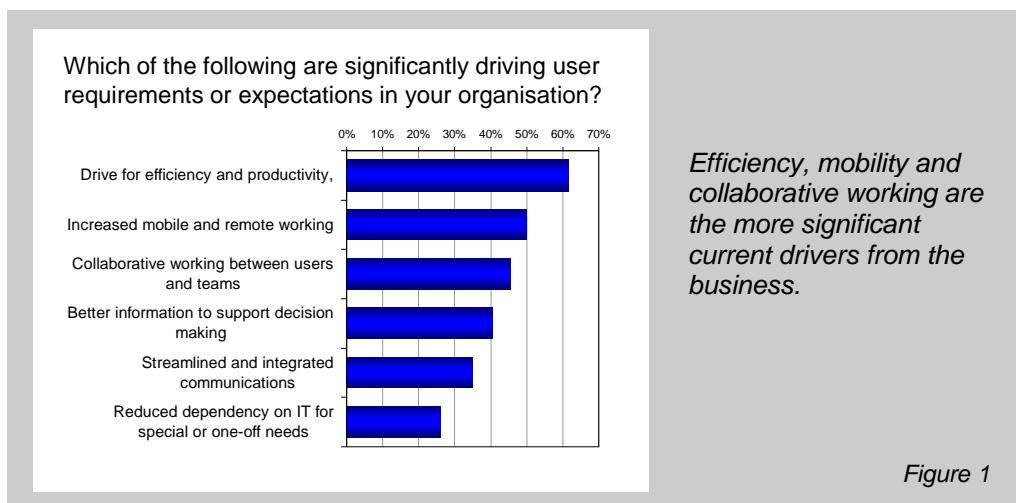
- Workflow/business process management
- Identity management
- Content management

This is the starting point for this research report. We are not trying to determine whether the platform concept exists, as it is intrinsic to how we consider IT. Neither do we believe the term 'application platform' exclusively equates to something that can be bought off the shelf, as organisations are also able to set their own best-of-breed standards. Rather, we are interested in providing a snapshot of where things are in terms of application platforms, what's driving them, and how organisations can get the most out of them.

The business and IT backdrop

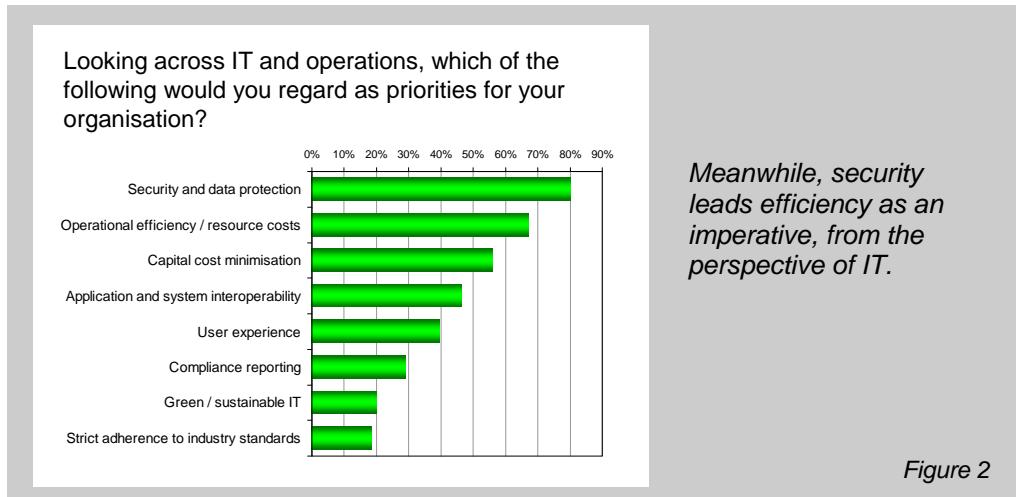
Any report written at the moment needs to consider the current economic context and its implications for how IT is being deployed. Not since the dot-com bubble burst has so much scrutiny been placed on the value of investing in IT. This is particularly relevant for application platforms. Any such foundation layer has an inherent upfront cost, its business case dictated by how much it can save once it is in place. The question becomes, is it worth investing in an application platform, even if – or indeed, exactly because – the financial climate is so tough?

The answer to such a question will vary from organisation to organisation, but it is worth reviewing what respondents told us were the biggest priorities coming from business users. As we can see in Figure 1, the top priority at the moment is to drive for higher levels of efficiency and productivity.



It is interesting to note there is little variation according to company size. "Efficiency and productivity" is the number one priority, and collaboration and mobility jostle for the number two position depending on the size of the organisation.

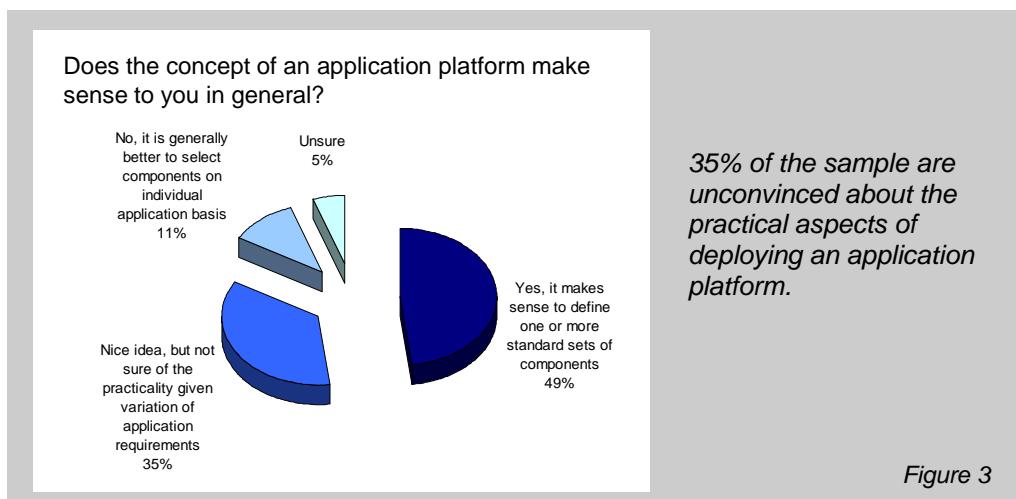
Looking from the point of view of the IT department, efficiency still ranks very highly but it is second to security and data protection (Figure 2). This is very important as it is indicative that cost cutting isn't the only thing organisations are thinking about. So, why does security rank so high however? Anecdotal conversations with IT decision makers suggest that this is also a factor of the times. It is an unfortunate truth that one of the largest risk factors is the workforce itself. One senior IT security manager at a major financial institution, for example, told us how employee uncertainty due to people worried about losing their jobs could lead to more internal security breaches.



Clearly, efficiency and cost control are important, but they are not the only factors we need to consider as the backdrop for application platforms.

The current state of application platforms

So what are we seeing? Given our comments in the introduction above, we would have been surprised if respondents had told us that application platforms were a bad idea. However while the principle may be compelling, the practice may be more of a challenge (Figure 3). Of the 84% of respondents who are happy with the concept, 35% are less sure of the practicality.



All the same, a good 62% of respondents have adopted an application platform either informally or formally (Figure 4). Note that the question of whether to deploy such a foundation is moot for a further 6%, who are dependent almost entirely on packaged applications.

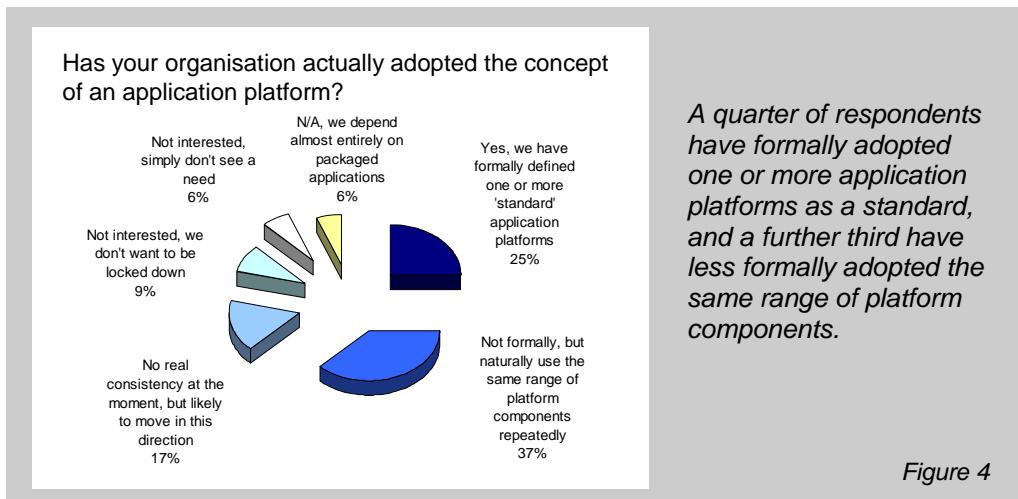


Figure 4

It is interesting to review how this picture varies according to company size (Figure 5). The proportions go up considerably in larger organisations, which makes sense given the likely numbers of custom applications involved. The more dependency there is on custom application development, the more attractive an application platform will appear.

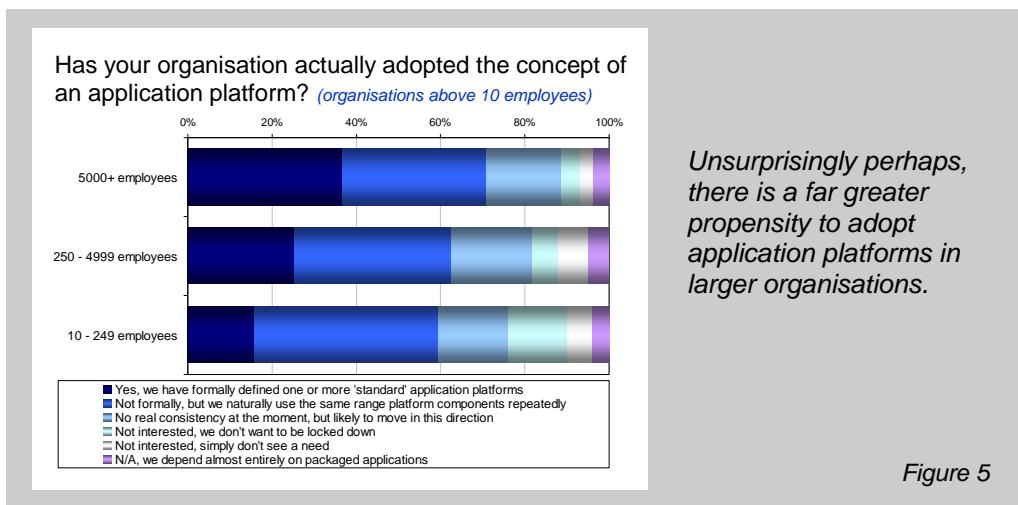


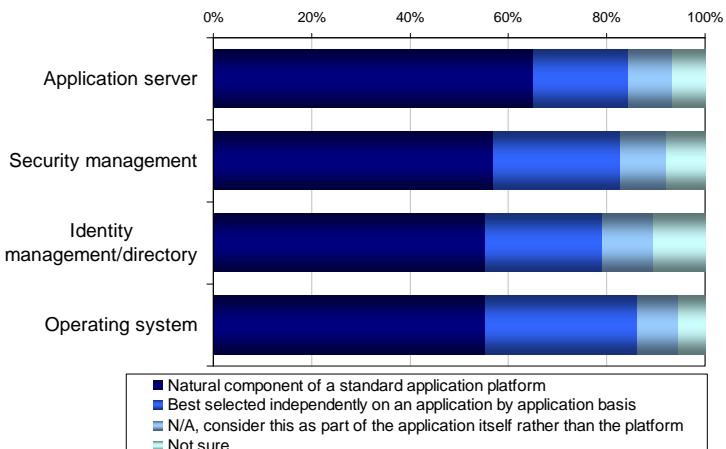
Figure 5

While the principle of application platforms may be generally accepted, there can be considerable variation on what goes in the platform versus what should be seen either as part of each application, or what should be seen as entirely separate. It would appear that there is no hard and fast rule – each organisation will be different, and will require different elements of the application platform as a result.

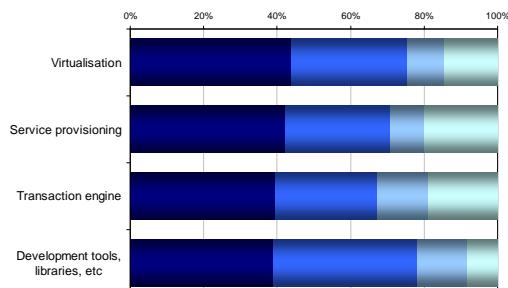
This is an important point. While we concur with the principle of application platforms, the practice is largely going to be dependent on the specific needs of an organisation. Bluntly, it is important not to put the cart before the horse – just because a vendor or pundit states that certain capabilities *should* be part of the platform, the reality should be dictated by those capabilities the organisation would actually find the most valuable, and indeed, the most straightforward to deploy.

Given this, we can learn much about the state of play for application platforms in general, when we consider what the majority today consider to be the most relevant capabilities, versus the least relevant. Figures 6-8 below consider three groups, ranking top, middle and bottom capabilities. So, what can each group tell us?

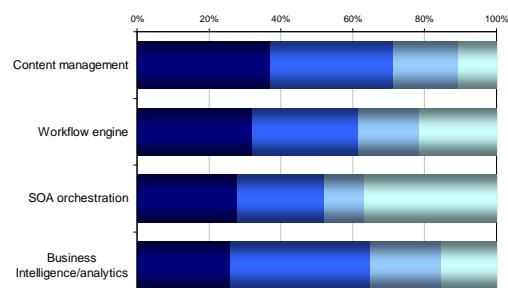
How do you see the following capabilities fitting into the application platform concept? (Top 4)



How do you see the following capabilities fitting into the application platform concept? (Middle 4)



How do you see the following capabilities fitting into the application platform concept? (Bottom 4)



Respondents view certain capabilities as ranking much higher than others, in terms of fitting with the platform concept – which offers a good indication of where the ‘waterline’ lies.

Figures 6-8

Considering the top group first, it is clear that the ensemble of functions we know as an ‘application server’ remains firmly at the core of the application platform. The operating system is also seen as important. It is telling indeed that the other two elements are security and identity management, not only in the light of what we saw in Figure 2, but also because it reflects one of the big issues organisations are looking to tackle – that of managing identities across applications.

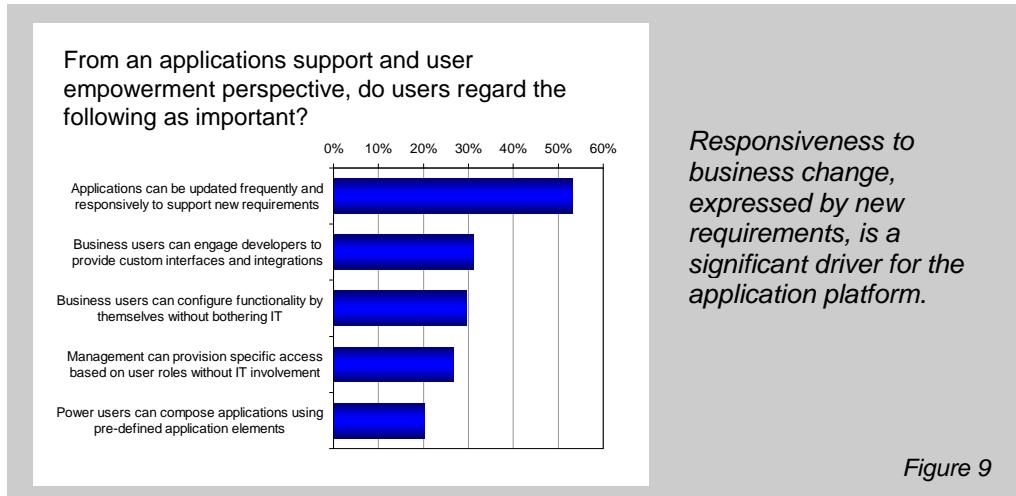
Why identity management? We cannot derive a clear view just by looking at the data, however we have seen ‘identity’ become an increasingly important concept in the light of banking scandals such as that at Société Générale at the beginning of 2008. Managing user identities across the wide variety of applications in the environment has long been a challenge. However the need to manage who has access to what, coupled with compliance regulations such as the Payment Card Industry (PCI) security standard, and authorities such as the Information Commission in the UK showing increasingly sharper teeth, adds impetus to doing something about this. The knock-on effect is also the increased availability of suitable technologies to integrate and share identity information, both within and outside the application platform.

Some of the technologies in the middle and bottom groups may come as some surprise as they would appear to be natural elements of the application platform. Workflow and SOA orchestration, for example, neither of these are worth developing from scratch given the plethora of options available from vendors. This emphasises the ‘snapshot’ nature of this study – as the water line

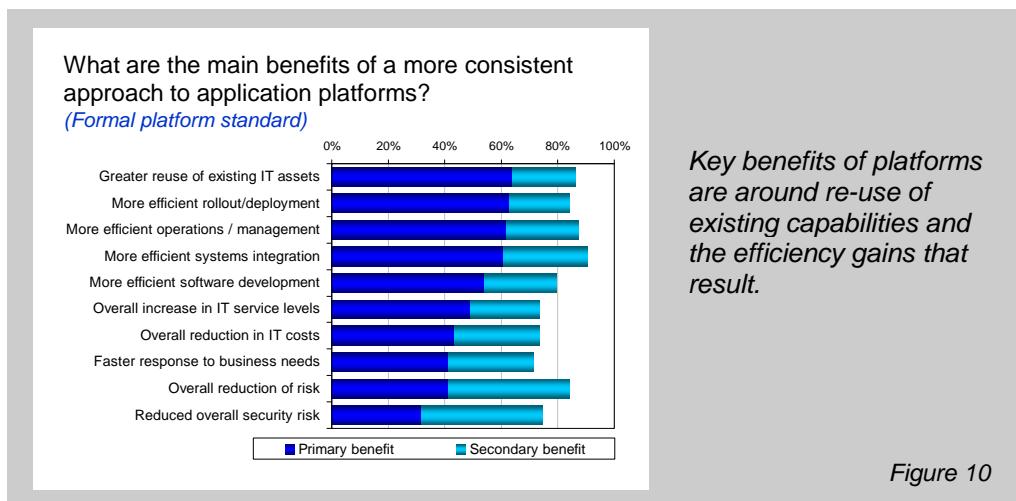
rises, we would expect such technologies to be subsumed into the platform; for now however, it is clear that other priorities hold sway.

Where application platforms fit

So what benefits can be had from application platforms? To understand this, it is worth reviewing what business users want from those who provide applications. There is a place for the business configuring and even building functionality for itself, but most of all, IT responsiveness is seen as the key (Figure 9). This is important, not least because it emphasises the importance of providing application updates, as opposed to the idea that applications can be written once, and then used without any significant ongoing change.



Such a requirement has major implications for the role of the application platform. If we look at the sub-group of respondents who have already implemented some kind of formal platform standard, we can see how they are responding to this need for responsiveness (Figure 10).



There are 4 benefits which have an equivalent level of significance at the top of the list:

- Greater re-use of existing IT assets
- More efficient application deployment
- More efficient ongoing operations
- More efficient systems integration

It is interesting to see how three of the four main benefits are down to greater efficiency, and it is straightforward to see how they feed directly into higher levels of responsiveness. Efficiency means

less waste, of both time and money. We know, from various studies as well as anecdote, how many IT organisations are running hard to keep up with changes to their environments, so any efficiency improvements will likely have a direct impact on service levels.

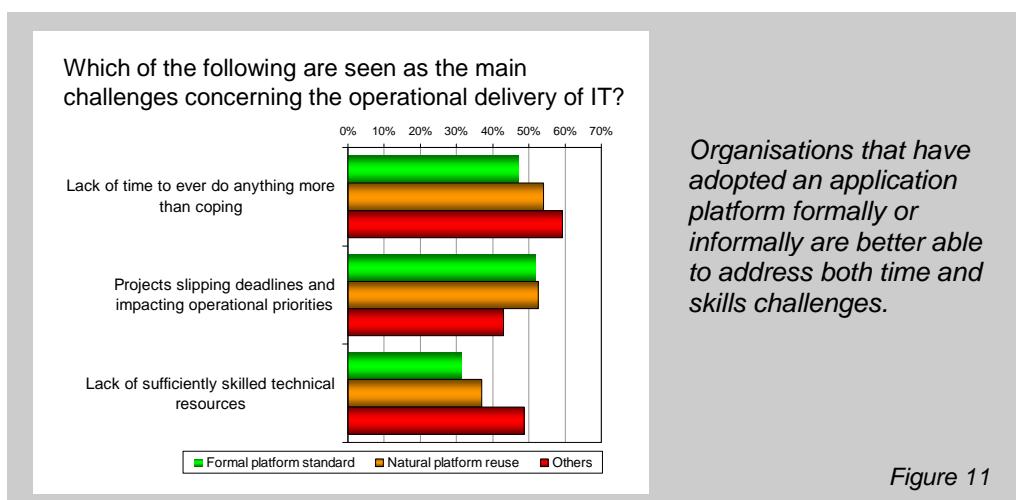
The fourth benefit concerns re-use, which is clearly a cornerstone of the application platform concept. However and as we have already noted, such benefits do not come easily. We will revisit this in the next section when we consider how to make the most of application platforms.

It is also interesting to note how security features do not figure highly in terms of actual benefits of application platforms, given that in Figure 2 this was seen as a requirement on IT. There is clearly more that can be done for application platforms to meet the needs of those building on them.

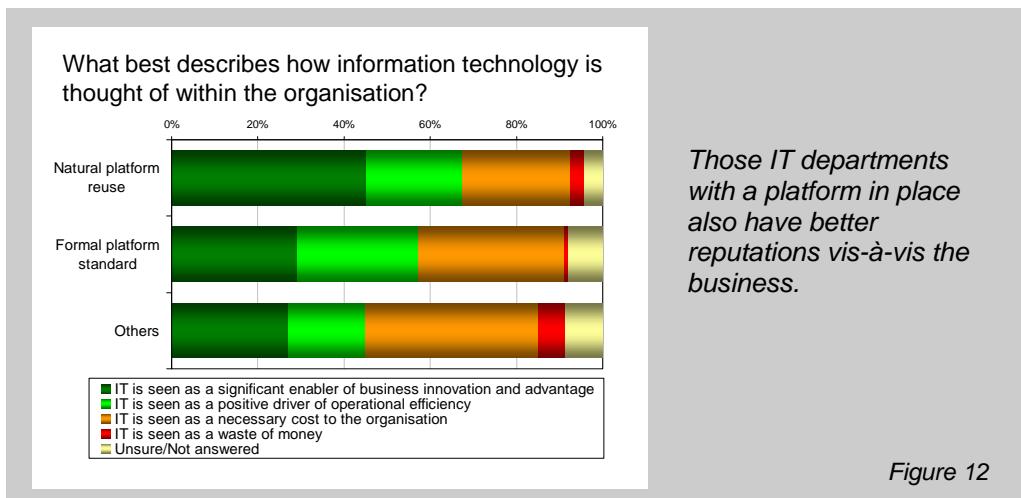
Meanwhile, it's worth noting how application platforms can address some of the challenges of delivering some of the above. When we asked a general question about the challenges faced by the operational delivery of IT, the top three were:

- Lack of time
- Project slippage
- Lack of skills.

It's very interesting to consider these challenges in the light of application platforms. As we can see in Figure 11, application platforms can't help a great deal when it comes to solving issues of project slippage. However, organisations with a formal platform in place do show improvements to both time and skills shortages.



The relationship between the presence of an application platform and better service delivery operates as a virtuous circle – more time means more opportunity to plan what should be in the platform, and therefore become more efficient still. To underline this point, it's interesting to note the positive correlation between the presence of an application platform with views on how IT is perceived by the business (Figure 12).



Those IT departments with a platform in place also have better reputations vis-à-vis the business.

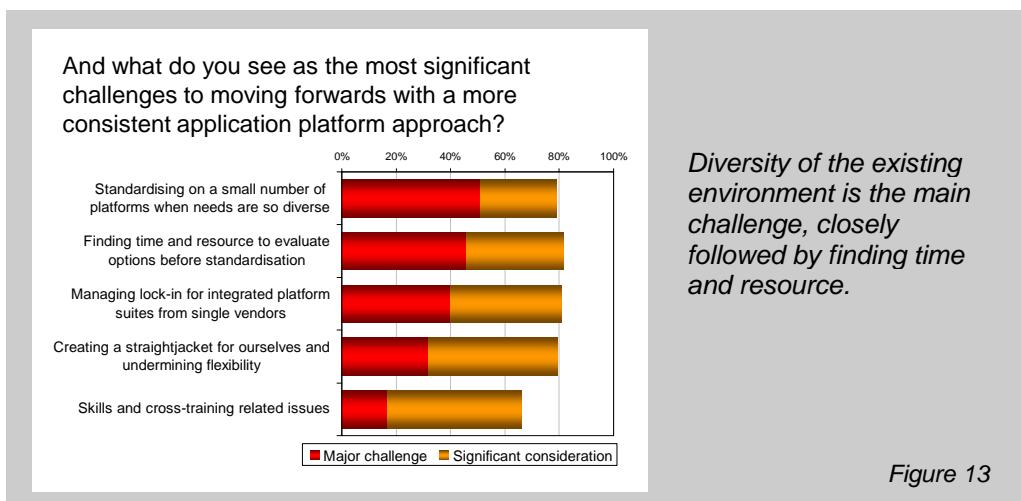
Figure 12

What's very interesting to us is that the sub-group of IT organisations that are seen as a significant business enabler, are also more likely to be putting their own platforms together than buying an integrated vendor stack, whereas for 'operational efficiency' subgroup things are the other way round. While the 'in-principle' benefits of either home-grown or vendor supplied application platforms are similar, we believe this reflects how bought-in platforms may well be adopted by the second group as primarily a cost-cutting measure.

Facing the deployment challenges

Cutting to the chase, then, what did respondents tell us were the challenges faced when looking to implement an application platform? Keep in mind, that such a deployment is an infrastructure project in that it adds little direct value of its own, and takes time and money that could be used elsewhere. Furthermore, organisations with diverse environments would probably struggle to list all the applications under management, never mind identify the common components with an aim to rationalise in some way.

It is unsurprising, then, that such diversity is seen as the main challenge (Figure 13). If this is the case, one thing is for sure – that any wholesale adoption of a pre-fabricated component stack is going to be fraught with difficulty. So, where to start?



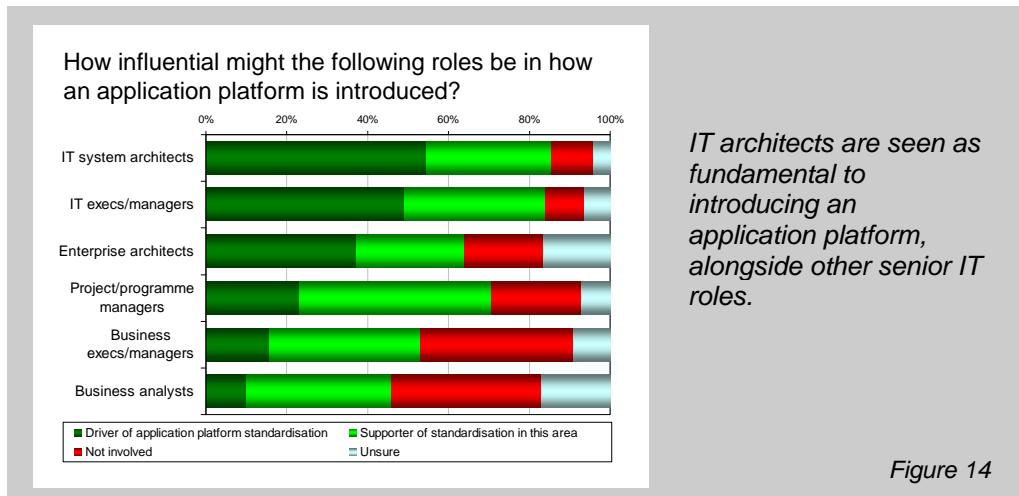
Diversity of the existing environment is the main challenge, closely followed by finding time and resource.

Figure 13

So, what should an application platform deployment strategy contain? We have learned certain fundamentals from previous studies and from experience – not least that it can be better to consider the platform in the context of a smaller number of specific requirements, rather than trying to adopt a platform as 'strategic' across the entire IT environment. In other words, it is worth asking the

question, "What is it that we are planning to do over the next 18 months, which could benefit directly from the deployment of an application platform?"

From this starting point, it is then possible to consider the impact (positive and negative) on the existing application pool and how it is managed. Positive impacts may incorporate the ability to migrate from custom-built application capabilities, to some of the functions provided by the platform; meanwhile, downsides should incorporate that in the short term anyway, the platform itself will introduce an additional layer of complexity. Given that such considerations are architectural, it stands to reason that architects are seen as fundamental when putting together such as strategy (Figure 14).

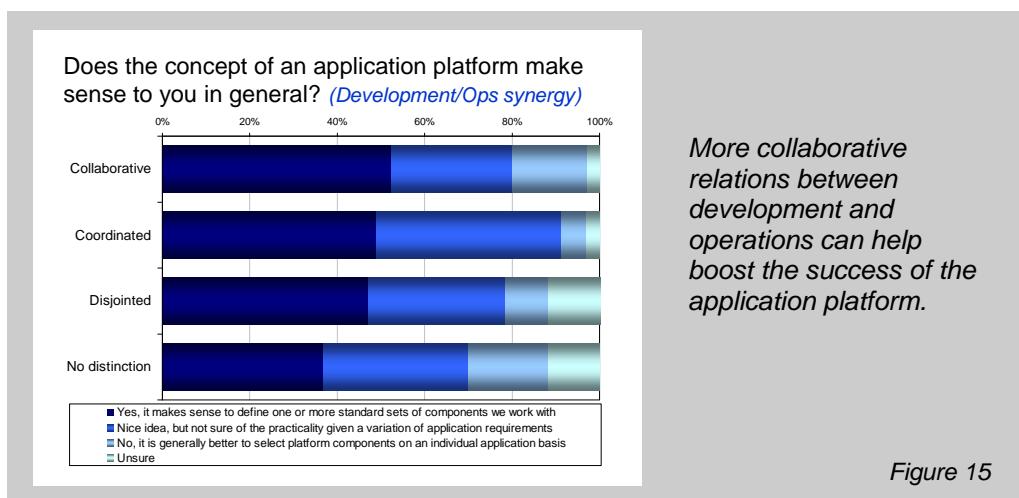


IT architects are seen as fundamental to introducing an application platform, alongside other senior IT roles.

Figure 14

Without descending into motherhood, it also stands to reason that a well-run IT organisation will be better able to drive value out of application platforms, compared to one which is poorly run. This goes back to the virtuous circle idea we referenced before – well-run IT organisations will likely have a better understanding of what exists in their environment, and will be better able to think strategically about making it more efficient.

There are a number of ways in which a well-run IT organisation can be measured, as we describe in our report 'IT on the Front Foot' [1]. As an illustration of how these relate to application platforms, we can compare the likelihood of implementing an application platform, with the (seemingly unrelated) characteristic of how closely development and operations teams interact. As we can see in Figure 15 there is an interesting correlation between the two factors.



More collaborative relations between development and operations can help boost the success of the application platform.

Figure 15

There are no easy answers to be had, as well-run IT cannot be created out of nothing. However, if we could offer one piece of advice, it would be to ensure that the organisational pieces were in

place before attempting to benefit from an application platform. Otherwise, like many other types of infrastructure project, one could very much end up with a white elephant instead.

Conclusion: where to from here?

IT professionals have lived with ‘waterline’ concepts for years, so let us first acknowledge it is important not to get distracted by the notion that the idea of an application platform has just come into existence, or that one definition is ‘*de-facto*.’ However, we can see the current interest in application platforms, and the fact that many organisations are reporting benefits from implementing them, as a prompt to take a step back and consider just how much unnecessary diversity and redundancy exists in the applications infrastructure of many organisations.

If you are looking to consolidate or standardise onto an application platform in some way, where you go from here depends largely on where you are now. We know from the research that many organisations have already got to the point where a de-facto set of capabilities are used time and time again, and are likely to find some merit in standardising the way such capabilities fit together. However, it is unlikely that such efforts will be purely technological in nature – any efforts will no doubt require a review of organisational and operational aspects of IT as well.

In some cases, there may be value in formally adopting an ‘integrated application platform’ suite or framework from a specific vendor (or possibly more than one). ‘Vendor lock-in’ is something to be aware of, but organisations need to balance this against the efficiency gains that can be had from ‘getting the job done’ at the component level. This is especially true if such gains can then be channelled towards spending more time on more value-added work. On a positive note, we do know of a number of organisations that have reached the point where the application platform is already deployed, and they are now building additional services on top with far less overhead.

For organisations which do elect to go down the vendor-specific route, an important principle to hold to is that it should be the individual organisation which decides which components form part of the application platform. When exploring options, it is important to make sure that unwanted or unnecessary capabilities are not ‘crow-barred’ into the IT environment. Meanwhile, the worst case is that the business ends up held back due to a lack of certain features in the platform, or because commercial terms prevent the very flexibility and responsiveness that the platform is supposed to enable.

On this note, what of future safety? A place to start is with a platform that is both relevant today, and which supports extension over time. Unfortunately though realistically, there will come a point when even the best thought through application platform will reach its use-by date, and joins the ranks of what we might term ‘legacy’. No IT is ever built to last more than a few years, and for this reason we would advise against seeing the application platform as something which, once implemented, need never change. For the best chance of longevity, we would recommend taking good account of the Pareto principle, that is, look for the 20% of capabilities that would cover 80% of immediate and known future application requirements.

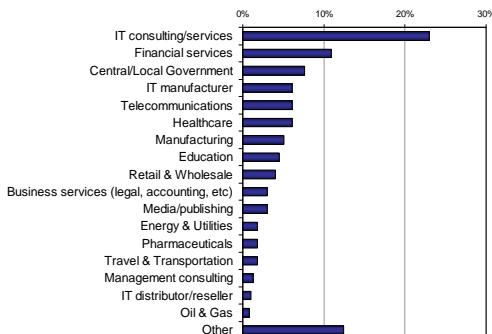
As a final point, we would re-iterate that the application platform should be seen as a means, rather than an end in itself. While it is infrastructure, any application platform initiative should be bound to specific projects that can reap its rewards as quickly as possible.

Appendix A – Study Sample

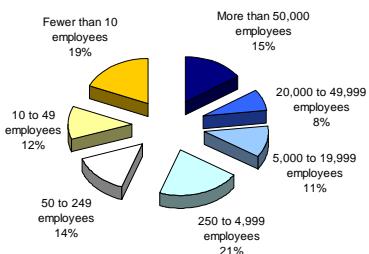
The study was designed and executed by Freeform Dynamics in November 2008 via an online survey conducted in conjunction with The Register.

477 responses were collected. The demographics for the interview sample are shown in graphical format in figures 16-18.

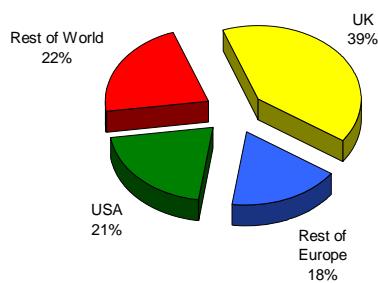
What sector does your organisation operate in?



Approximately how large is your organisation (worldwide) in terms of employees?



Which part of the world are you based in?



Please note that there is a certain level of bias towards the topic of the survey in any online research scenario. The 'self selection effect' is most strongly felt when discussing topics which attract strongly polarised views. In this case, as we are dealing with opinions on a generic topic and reporting on relative absolutes, we are satisfied that the self selection effect does not add an undue degree of bias to the responses gathered.

Appendix B – References

[1] IT on the front foot Freeform Dynamics Apr 2008

Suggested Further Reading

IT Management Checkpoint Freeform Dynamics Jan 2008

About Freeform Dynamics



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