The State of Enterprise IT:
Re-examining Attitudes to Core IT Systems
INTRODUCTION

If you don’t understand the problem, how can you possibly solve it? Seven years ago, Micro Focus sponsored research established that most senior IT leaders didn’t know the value of their IT assets. We thought this widespread lack of knowledge about the core systems underpinning their businesses and consuming large chunks of budget, was both remarkable and alarming.

This was significant news. Despite a backdrop of the impending banking collapse that claimed many of the major financial players, the research made front page news in the Financial Times prompting many CIOs to sit up and take note.

Today we must decide whether any lessons have been learned. That’s because IT leaders have even more to think about. Regulatory pressure continues to grow and innovation must fight it out with overdue maintenance in the battle for much-needed resources. Meanwhile, the IT landscape, far from simplifying, has grown increasingly complex and fragmented, with new business models and technology providers challenging the status quo at an alarming rate. So how are these leaders adjusting to these new challenges – and are they making progress with those already nominated?

To find out, Micro Focus commissioned fresh research to re-examine attitudes towards those core IT systems and discover whether blue sky thinking is delivering real-world solutions. The conclusions may surprise you.

EXECUTIVE SUMMARY – MISSED OPPORTUNITIES TO ADDRESS KEY CHALLENGES

The research was taken from 590 senior IT decision makers in private sector organizations across eight countries with mainframes in their infrastructure. It shows a distinct lack of progress. Indeed, there is a strong argument to suggest that the situation has deteriorated.

The world has moved on, but as IT struggles to keep up, many IT leaders and decision-makers have not. There is a perplexing ambivalence towards major emerging challenges in the IT world. Opportunities are also being missed to counter new and emerging threats with readily available solutions. The research uncovers new attitudes in five key areas:

- New Perspectives on Old Iron: The Future of the Mainframe – while a landslide of responses suggest mainframes are regarded as a crucial component of the IT landscape, justifying appropriate expenditure has become worryingly difficult
- Credit Check: Identifying, managing and clearing the “IT Debt” – while the IT Backlog is an accepted norm across industries, the trend is being all but ignored and the average has soared by 29% in 18 months
- Skill Up: Addressing Mainframe Skills Challenges – Despite a widely-held industry concern that we are in the middle of a skills crisis, the research fails to support this. A majority of organizations (54%) were reasonably comfortable with the prospect of new skills acquisition
- Burden or Opportunity? IT Compliance – Only 12% of organizations felt they still had the incumbent skilled teams to undertake compliance work
- Cloud your thinking: Delivering Value in a Mobile, Cloud-enabled World – Adoption rates for Mobile and Cloud-based deployments of mainframe-based systems will increase to 37% and 42% respectively within two years

Ultimately, the research presents us with a fascinating insight into a world undergoing significant change, and reveals an industry that is facing its challenges with varying degrees of confidence and success. Indeed, where change is ongoing – and fast-paced – we are arguably reporting on regression. That said, opportunities to progress certainly exist and we have called out a few here.

This research also uncovers new issues. For example, the burden of overdue mainframe maintenance is organically growing, as each new project layers extra complexity on application understanding just as key skills leave the business. And yet our research reveals that fewer than 10% of companies claim to be using software solutions to help them fill the growing gap in critical application understanding.

Similarly, whereas a few years ago, many companies would regard outsourcing and compliance as two distinct issues, our research reveals the number of companies outsourcing their compliance work – and some alarming misunderstandings about where the legal responsibility lies. For example, 92% of US and 87% of Hong Kong companies believe the problem passes this on to the external provider. This confusion carries tremendous risk.

Among the most misunderstood, yet utterly indispensible assets, is the IBM mainframe. Yet, attitudes and understanding of this core technology vary widely, as you will see...
THE FUTURE OF THE MAINFRAME

The mainframe isn’t going away. It has resilience and longevity on its side. We’ve heard it before and once again it appears to be true: on average, IT leaders surveyed felt they’d have the mainframe for another 10 years, with almost two thirds of them suggesting it would be higher still, and it is worth reiterating that these are minimum figures.

Regional variation (Fig 1) shows Hong Kong to have the highest expectation, averaging 16 more years of big iron, with UK and Brazil sitting at the other end of the spectrum, anticipating exactly half that figure, with eight years of mainframe life expectancy.

In contrast to this, however, 11% of respondents (Fig 2) expect to lose their mainframe much sooner, within the next four years; no surprise, perhaps, to followers of mainframe fortunes – after all, differing attitudes have persisted for decades. But even here, regional variation shows the story is never so simple, with US IT leaders, for example, particularly seeming to disagree with such a short life expectancy – only 3% of them aiming this low, suggesting much more widespread acknowledgement of the mainframe’s longevity.

Within this climate of continued reliance on the mainframe, it is disturbing to note that a significant majority (81%) find it difficult to justify the expense of maintaining mainframe applications and of those, only 10% claim they always succeed (Fig 3).
From this, we get a clear picture of the underlying uncertainty that can trouble organizations hosting mainframes. Consider the regional data for Hong Kong, for example, where mainframe longevity is expected to be so much higher than average: organizations have some level of difficulty justifying mainframe application maintenance spending in 100% of cases. That would seem to be an impossible climate within which to get anything done efficiently, or maybe even at all. And the UK isn’t far behind them, with 95% finding it difficult to justify work. In their case, however, at least we can see a partial explanation given their reduced expectation of future mainframe usage.

As Figure 4 illustrates, the impact of having difficulties in justifying mainframe work is considerable. Most organizations (63%) claim they are facing compliance/risk issues as a result – with the figure rising even higher in particular regions (93% in Hong Kong, 90% in the US); only Germany (49%) and the UK (48%) display a minority view – but even here the figure is alarmingly high when you consider the implications to the organization of failing to comply.

Almost all (98%) believe that demonstrating the resilience of their current mainframe environment is important, and most (91%) believe this importance will only get bigger (Fig 5).

Despite this, there is great uncertainty over whether their mainframe environments are indeed resilient, with fewer than one third (32%) claiming 100% confidence in their mainframe not being at risk. Once again, there is regional variation, with US clearly feeling the most bullish about the resilience of their mainframe environment with a 52% showing. Perhaps more noteworthy is the confidence shown by the US given how strongly (93%) they feel they are facing compliance/risk issues as a result of difficulties in getting maintenance work approved.

Clearly, as so many times before, the future of the mainframe will continue to offer up many contradictions as organizations establish an environment that best suits the needs of their business. In some regions, in a few industries and particular organizations, the mainframe may have as little as four or five years left. In others, its future has never been more assured. But amid this diversity, one thing stands undisputed – it is the health of the applications upon which the business is running that matters most, more so than the platform. Their continued relevance to the business is vital.
Managing the Enterprise IT Debt

IT Debt has been defined by Gartner as “the cost of clearing the backlog of maintenance and modernization required to bring the corporate application portfolio to a fully-supported current release state”. In other words, then, it is the effort to tackle the backlog of work. Yet the phrase ‘IT Backlog’ has little traction in popular IT parlance, simply because IT Debt has become a catch-all term for any number of issues.

IT Debt – what it is

‘IT Debt’ is a de-facto term first promoted by Gartner in 2010 to apply a quantifiable measurement to an otherwise abstract concept. Initially at least, it worked well, but the world has moved on since 2010 and the phrase is now misused, overused, misunderstood and applied generically instead of on a case-specific basis.

The phrase attempted to monetize the backlog of application work that most organizations were experiencing and – in many cases – still are. But this is by no means a given and some of the inferences around so-called IT Debt can be unhelpful, particularly to the owners of mainframe estates. But this phenomenon is by no means synonymous with mainframe and readers should mentally uncouple the two from this point onwards.

IT Debt – what it is not

It is important to note that IT Debt should not be perceived as being mainframe-specific. Indeed, it should not be pinned to any given platform at all. Instead, IT Debt is simply the confluence of any number of factors that will contribute, in greater or lesser concentrations, to the issue.

An IBM report noted a positive ‘cost of ownership’ for their System z against distributed servers. So, while a level of IT Debt remains, this is further proof that neither the mainframe, nor alternative, mass-distribution systems are the culprit. Meanwhile, this report and others echo the findings that while IT Debt/IT Backlog may be caused by a variety of factors (e.g. IT estate complexity, historical IT investments, current IT strategy, skills, technology and tools, innovation, architecture and technology strategy, business strategy, vendor and third party relationships and infrastructure), the underlying platform is entirely immaterial.

With that note added, we can look at how the problem is perceived among our sample.

Inevitably, the bigger the IT Debt, the bigger the level of risk the organization is facing. The more out of date the documentation, more complex and costly the code is to maintain, the more antiquated and potentially unsupported the technology will be – all of which results in taking longer to release new updates. Knowing the size of your IT Debt is a great place to start and provides an initial sense of how well-managed the application portfolio might be.

On average, only 41% of senior IT leaders surveyed knew the size of their IT Debt. Once again, however, we see a fairly bullish response from the USA bucking this trend (96% of companies felt they knew), while Germany and the UK were slightly below average at 38% and 39% respectively (Fig 6).
As to the size of that debt (Fig 7), respondents felt that the cost to bring their entire application portfolio up-to-date was $18m, of which $11m was required to update just the mainframe applications. As before, though, this average masked some considerable regional variation, with Germany way out in the lead on debt at $56m. The US, with the second highest debt, sits at a trifling $13m by comparison. A significant difference between the countries, however, is just how much of this perceived debt is associated with applications residing on the mainframe, with Germany at $20m and the US at $12.6m – 36% and 96% respectively.

Reviewing the IT Debt results by company size reveals an interesting perspective. As we might possibly expect, average estimates for IT Debt grow with company size (see below). However, this trend only applies to the entire portfolio. Taking the mainframe portion alone, the largest companies actually witnessed a drop, making its percentage contribution towards the IT Debt much lower than the smaller companies (Fig 8). It is worth reiterating that point and reflecting it against our qualifying comment regarding the unhelpful trend of tying so-called IT Debt to any given platform. Indeed, our sample suggests that association between the mainframe and IT Debt is more tenuous than most.

One conclusion to draw from these results is that the complex heterogeneity of distributed systems in larger organizations carries a higher implied cost than any equivalent increase in the mainframe.

When asked about growth of their IT Debt over the next five years, companies responded, with very little variation by region, size or industry, to suggest an average of 9%.

Most forms of debt accrue interest. IT Debt is no different, with each new system, each new request for change on an existing system, and each incremental upgrade to an underlying platform, bringing further complexity – and ultimately making it harder to untangle the web of business logic and data and move the business forward.

Drawing an overall conclusion from this set of results isn’t hard – doing so in the context of research conducted seven years ago makes that conclusion quite disturbing. Once again, the existing IT assets of an organization are failing to receive the attention they need. Back then, it showed up in the survey data as ignorance of their business value. This time, it appears as too many IT leaders having too little knowledge of how much cost there is in bringing those assets up-to-date – and with an average of $18m hanging over each company to carry out the work, and with interest building up each day, with each new project or change request, the cost just keeps on growing.
The Mainframe Application Skills Issue

Senior IT leaders continue to face challenges with their incumbent core systems skills; only 15% claim to have no difficulty in recruiting the right people. The problem is widespread too, with only seven individual companies of the 590 surveyed claiming not to know how hard it is to replace these much needed skills.

And yet, only 4% of respondents would rather move away from the mainframe – a result which echoes earlier findings around mainframe longevity and suggests some measure of desire to improve any existing resource constraints. So, once again, as it was with the justification of mainframe expenditure on maintenance activities, it would seem we have a picture of determined resistance in the face of significant challenge; people are simply not ready to move away from value provided by their chosen enterprise platform, despite the difficulties it presents.

As has been suggested in recent years, much of the issue with mainframe skills lies in the age profile of the people currently doing the job and the continued reluctance of younger students coming through to equip themselves for taking on the baton of mainframe maintenance and development. When asked how many of their mainframe maintenance staff would be retiring in the next five years, the response was fairly consistent across the regions – approximately 14%. And yet if we look more closely (Fig 9) at how easy it will be to replace those people, we start to see that regional differences mean the situation has bigger implications in some countries than others.

Perhaps the most telling difference is at the extremes. For example, by comparison with the other countries surveyed, US companies claim to find it much easier to recruit mainframe application skills – 35% of them suggesting it is ‘simple’ against an average of 15%. Conversely, only 2% in the UK and none at all in Hong Kong and Singapore felt that way. For Hong Kong, in particular, with its anticipated 16 years of further mainframe usage, this would appear to be a serious issue. However, if we look more closely at the other end of the spectrum, where companies claim it is ‘extremely difficult’ or ‘impossible’ to find the right people, we see that Hong Kong considers the situation to be easier than everybody else, by some considerable margin, with no companies claiming it to be either extremely difficult or impossible. Germany and Australia/New Zealand weren’t far behind them.
Another way of looking at it (Fig 10) is to group together those companies who consider it to be simple or only 'somewhat difficult'. The average across all companies is 54%. However, three countries score significantly higher.

There are clear causal factors at play here. For example, the USA, Australia/New Zealand and Hong Kong reported the greatest life expectancy for their mainframes and were those companies scoring highest on their perceived ease of recruitment. This is no coincidence, since these two are so intrinsically linked.

That said, with 85% of companies experiencing some level of difficulty recruiting mainframe application skills, it would be entirely inappropriate to suggest here that there was anything other than a skills issue in the industry – and, unsurprisingly, attitudes towards government and/or academic initiatives reflect this.

Almost a third (31%) of respondents do not feel their government is doing enough to assist in addressing the apparent overall IT skills gap, while slightly more than this (35%) think that, while the government is indeed doing enough, they are unsure about the effectiveness of the programs in place.

This attitude actually proves to be quite generous when compared with general opinion of academic initiatives, with more than three quarters (78%) of IT decision makers not believing that academic institutions are doing enough to address the overall IT skills gap.

That said, in Figure 11 we see one significant regional variation, with US companies set apart dramatically from others in their opinion; 78% say they feel academic institutions are actually doing enough – a view which no doubt goes toward explaining their relative comfort over recruitment.
A clear majority (83%) felt it was valuable for students to learn mainframe languages like COBOL and PL/I, with 90% feeling they should be part of the curriculum, be that core (44%) or elective (46%). The highest response saying they should not be studied was in the UK (21%) – once again, a reflection of their relatively low expectation of on-going mainframe ownership.

Alarmingly, and with very little variation, when asked what impact the mainframe application skills issue was having on their business, few organizations (only 8%) reported that they were using a software solution to help.

As expected, there is no ‘one size fits all’ when it comes to understanding the challenges of the industry in ensuring they have the necessary skills to keep their mainframe applications supporting the business. Attitudes differ. Concerns vary in size. While there is something of a shortfall between the skills required and those that are currently available, whether that constitutes an ‘issue’ per se or simply a statistical glitch is perhaps another matter.

Experience suggests that it is probably unhelpful to call this anything at all until we are sure that this quirk, this schism between supply and demand has become more established. Predicting life expectancy for developers is no easier than for other professions, and the cause and effect of skills availability may yet resolve itself.

The Burden of Compliance

A large part of the work of a mainframe applications team is coping with the onslaught of compliance and regulation to which businesses must increasingly conform. Levels of IT Debt and skills availability have a significant impact here, determining the ease with which work can be done – in terms of both the development itself, but also the initial understanding of where that work needs to be carried out. Very often this relies on individual expertise, with companies turning to the subject matter experts who have been working on the code for many years.

When asked how much of that original knowledge still exists within their organizations, responses provided further color to our picture of the challenges being faced by mainframe companies – only 12% felt they had several team members with original knowledge of the code.

Regional variation here might suggest some interesting underlying factors, with France and Germany, both of whom traditionally support rigorous employment laws, standing out from the average, with 23% and 19% of companies respectively feeling that they had a good level of original knowledge. Alongside this, respondents from Australia and New Zealand were also reasonably confident, with 18% saying that they were well covered. It would be easy to speculate that a narrower job market for mainframe programmers in the region encourages a longer tenure for employees, but further research for this and the German and French situation would be required to verify this.
At the other end of the spectrum, amidst an average of 14% of respondents saying they had no-one left with original knowledge of the code (Fig 13), a staggering 57% of US companies made that same claim.

![USA stands alone in believing they have no-one left with original application knowledge](image)

Figure 13

When original expertise is unavailable to guide programmers through their work, organizations turn to system documentation for critical support in getting the job done. Incomplete documentation can result in high levels of inefficiency and, where regulatory compliance is concerned, much, much worse.

When asked about the health of their documentation, 74% of respondents considered it to be incomplete, with only the US companies (Fig 13) revealing significantly greater confidence in their position, with 66% saying that their documentation was 100% robust. Given how little original application knowledge is left within US organizations, it seems reasonable that they would enforce a robust practice of maintaining system documentation.

Once again, companies from Hong Kong and Singapore were among the most pessimistic in this regard, with 8% saying that they had ‘limited to no documentation’.

Much of the compliance work is now outsourced, with an average of 39% of related development and testing work being carried out externally. US companies outsource more than this, averaging 62% of compliance development and testing being outsourced. It is interesting to consider the impact of this last result as it relates to the amount of original application knowledge within US companies (very little) and the quality of their documentation (pretty good). Regardless of which came first, the decision to outsource or the loss of original knowledge, it is reasonable to expect the current arrangement to result in good documentation as part of the measure of completeness imposed on third parties.

Where companies do outsource their compliance work, when asked where the legal responsibility lies for this, 60% stated that they pass this on to the external provider, with US and Hong Kong companies significantly higher at 92% and 87% respectively. Alongside those who succeed in passing on the responsibility, 16% said that they would like to but were unable.

When organizations do outsource the legal responsibility for their compliance work, 93% see an increase in the cost of the project but are prepared to pay this; 75% say that it is simpler to outsource the job, and well over half (59%) say that having their outsourcing partner accept the compliance risk outweighs the cost implications.

Our picture of the modern mainframe world continues to build, with yet more detail emerging as we see how attitudes towards compliance are shaping the way development and testing work is done. In turn, this is certainly having an impact on much of the other work being carried out on mainframe applications – not to mention their likelihood of retaining appropriate skills. Once again, the US has emerged as standing out from the pack – not necessarily in its approach, but certainly in the extent to which that approach has been adopted.

It remains to be seen whether they are simply different, or whether they are leading the way and we will continue to see the responsibility for development and testing mainframe applications, and in particular compliance work, shifting to external providers.
Outsourcing

The nature of application outsourcing is changing, as end-user organizations look for something other than labor arbitrage to determine their engagement strategy. An undercurrent of dissatisfaction with project success pervades many of the relationships, encouraging new ways to manage, define and ultimately measure success.

For our mainframe organizations in this survey, when asked how much they outsource their development and testing, and why they do it, the results paint a familiar picture that suggests things haven’t moved on that much, and that speed and economy feature prominently in the decision to outsource – and that many (61%) are outsourcing despite it actually being more expensive, and doing so because of the skills deficit.

On average, the amount of mainframe development and testing being outsourced is 38% and 37% respectively (Fig 14).

While there are diverse reasons for choosing to outsource, the primary goals are to save money and complete the work faster (Figures 15,16). But for some, it was also about leveraging missing skills and sharing risk.
Delivering value in a Mobile, Cloud-enabled World

The days of mainframe applications on isolated green screens have gone. So have the days of customers accessing mainframe data by phoning up suppliers and having it read or sent to them. First it was through client-server desktop applications and web browsers. Now, increasingly, it’s mobile, with multi-device access operating 24/7. IT leaders are in a race to make their mainframe applications available in new ways – ways that will ultimately decide how many customers the business wins and retains, and how successful it is at engaging with its own workforce. How well they are doing it, and what impact a mainframe has on mobile and cloud-enablement, was the subject of this section of the survey.

Currently, among the companies surveyed (Fig 17), approximately one third of mainframe applications have been made available via mobile (35.4%) or the Cloud (33%). Considering the regions, US companies are well ahead in the access they are providing via mobile and the Cloud, while UK companies, in particular, are sitting well below average.
When asked how organizations saw things evolving in two years’ time, there were clearly plans for a steady increase in the provision of mainframe applications on mobile devices and in the Cloud, with the respective averages growing to 37% and 42% (Figures 18,19). Viewing the data by region for each we see that the US rate is much lower, presumably because of the higher base from which it is starting, and even though the growth rate appears small on the graph, the average increase in access across all the regions is significant in such a short time, representing a 17% increase for mobile and slightly higher (18%) for Cloud.

![Steady growth in Mobile access of Mainframe applications](image)

**Figure 18**

![....and Cloud access shows the same steady growth](image)

**Figure 19**

With a steady mobile and Cloud-based evolution taking place, respondents were asked how access was being utilized. On average, nearly three in five organizations (58%) have users who need access through a mobile web browser, 49% that need access through an Android app, and around a third (36%) that need access through iPad/iPhone apps. When asked the size of the user community actually requiring this access, the response is broadly similar: 14% through mobile web browsers, 15% through Android apps and 15% through iPad/iPhone apps.
And while desktop-based web browsers still take the lion’s share of access (with an average of 67% mainframe applications being accessed this way), in some regions this is no longer the case (Fig 20).

![Mobile access is overtaking desktop browsers in some regions](image)

When asked how hard it was develop mainframe applications for mobile devices and for the Cloud (Figures 21, 22), approximately three quarters (77% for mobile and 75% for the Cloud) of respondents say that it is difficult, ranging from ‘impossible’ (3% for mobile and 2% for Cloud) to ‘somewhat difficult’ (37% for both mobile and Cloud). Regional differences make for very interesting reading, for even within single regions there are clearly significant differences between companies – for example, while 8% of US organizations said they find it impossible to develop mainframe applications for mobile devices, 47% found it simple.

![Difficulty in Mobile development varies significantly within regions](image)

![Difficulties in Cloud development of Mainframe applications](image)
The patterns for both Mobile and Cloud development are very similar, with respondents clearly perceiving similar levels of difficulty for both.

Of particular significance within this survey was how IT leaders responded to the next set of questions – does having a mainframe make developing applications for mobile devices or Cloud-enabling existing systems harder (Figures 23, 24)? Once again, responses were similar across the two, with 84% of companies saying it was harder to develop for mobile and only slightly fewer (80%) carrying the same opinion for deploying existing systems to the Cloud.

One difference to call out here, is how the three regions most likely to see mainframe ownership as making no difference in the development of mobile or Cloud applications responded in one of the questions in a previous section. Not only were France, Germany and Australia/New Zealand significantly higher in their scores for ease in this section, but those same three regions scored most highly when asked about the number of people with original application knowledge who remained in their teams. Given that much of the challenge around mainframe ownership relates to aspects other than the underlying technology, if a team feels it has the knowledge and skills in place to do the work, then it is perfectly understandable for more of those companies to think more positively about their mainframe.

That said, our picture of mobile and Cloud development and deployment from the perspective of mainframe applications is largely one of steady progress in a challenging environment. And despite some limited regional variation, there is still an overwhelming opinion that mainframe ownership makes both these important strategic initiatives harder. Despite this, we are seeing significant activity in some regions, with countries like the USA clearly rising to the challenge and, judging by the number of respondents in that region who found it simple to develop mobile and Cloud-based mainframe applications, achieving reasonable success in doing so. It is perhaps no coincidence, however, that the region most successful in mobile and Cloud development is the one most committed to outsourcing their development activities.
CONCLUSION

Seven years ago, IT leaders were criticized for not knowing the value of their IT assets. Today, it could be argued that they do not respect them enough, and in doing so are eroding the value of those assets. Indeed, in the context of an industry where change is ongoing – and fast-paced – this arguably represents regression when we should all be looking to make progress.

Of course, in mitigation, it must be said that many enterprise IT organizations are caught in challenging circumstances, where cause and effect and self-fulfilling prophesies abound.

There is a broad acknowledgement of mainframe resourcing concerns, with a large number of mainframe application workers set to retire and recruitment of their replacements perceived by most organizations to be difficult. US companies largely appear to be outsourcing their way out of the problem and, certainly with regard to the development of mobile and Cloud-enabled mainframe applications, appear to be doing so very effectively. That said, US companies, more than any other, feel they are exposed to compliance risk through the difficulty they have in justifying mainframe maintenance work.

The burden of overdue mainframe maintenance is set to grow, as each new project buries application understanding just that little bit deeper beneath a new layer and key skills leave the business. And yet fewer than 10% of companies claim to be using software solutions to help them fill the growing gap in critical application understanding.

Turning our attention to the Mainframe: never has an underlying hardware platform seemed to garner such a disproportionate amount of attention, when it is the health and business vitality of the applications it supports that should be uppermost in peoples’ minds.

Recent press around the 50th anniversary has at least provided some much needed balance to the discussion around the future of the class-leading IT workhorse, but the debate will likely continue. It is the aim of this paper to ensure that this debate is fueled by information and real-life experience, rather than hyperbole and misperception. It is our view, based on the findings of this survey and nearly four decades of experience, that mainframe owners can be confident in regarding this platform as robust, time-proven technology, and can be the answer to – rather than the cause of – many of the concerns addressed in this paper.

Whether it be through outsourcing or investment in in-house development teams and the technology they are using, if organizations are to learn the lessons of seven years ago, and truly value their IT assets, they must begin to erode their so-called IT Debt, shore up the skills issue by supporting local and national initiatives and acknowledge and continue to evolve the strengths that exist in these core systems. Who would argue against us looking anew at the challenges for mainframe owners in another 50 years’ time?

REFERENCES

i ‘Recognising the True Value of Software Assets’, INSEAD, November 2007

ii ‘Big spenders brought to book over IT assets’, Sept 30th 2007

Please note – this requires a subscription

iii Research, conducted by VansonBourne, November 2013, featured 590 senior IT decision-makers selected from private sector organizations of 500+ employees who had a mainframe in their infrastructure. Eight countries were included in the research: USA (100 interviews), UK (100), France (100), Germany (100), Brazil (100), Hong Kong (15), Singapore (25), Australia/New Zealand (50).

iv For the purposes of this paper, ‘cloud computing’ is defined as a synonym for distributed computing over a network, wherein a program or application can be run on many connected computers at the same time.

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Micro Focus, a member of the FTSE 250, provides innovative software that allows companies to dramatically improve the business value of their enterprise applications. Micro Focus Enterprise Application Modernization, Testing and Management software enables customers’ business applications to respond rapidly to market changes and embrace modern architectures with reduced cost and risk.

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