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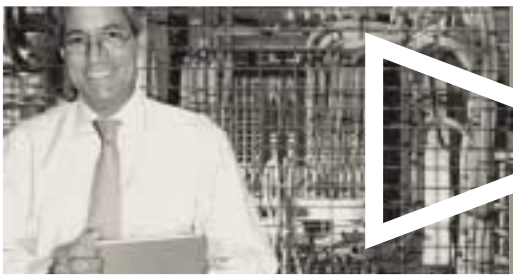

Give and Take

by Peter Armstrong, BMC Corporate Strategist

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Introduction

Although I am one of the world's greatest mainframe bigots, I must admit that I get rather fed up with the whole mainframe vs. distributed debate. Some of you may think that is a bit rich as I have probably helped to keep the debate going over the years, but in this paper I would like to look at what is happening in the world and what we can learn from each other.

Misconceptions

Too often, unfortunately, we tend to believe what we have been told by someone years ago and continue with our misconceptions, with all the associated issues that this causes. Let me give you a test and show you what I mean. Try answering the following questions and then read on.

- What man-made artefacts can be seen from the moon?
- Who invented the telephone?
- Who invented champagne?
- What colour is water?
- Who first discovered that the world is round?
- What will be the world's biggest killer by 2030?
- What was James Bond's favourite drink?
- How many legs does a centipede have?

If you answered: The Great Wall, Alexander Graham Bell, the French, colourless, Christopher Columbus / Sir Frances Drake or similar, cancer, vodka martini and 100, then you scored a sobering zero points! The correct answers are actually none, Antonio Meucci, the English, very faint blue, bees, tobacco, whisky and variable but never 100.

So it is with the youth of today coming into computing. They are told that the mainframe is an expensive piece of non-strategic rubbish filling up old computer centres, and that the only way forwards is UNIX/LINUX/WINTEL with some wondrous new Web 2.0 application running on it. They also think that CTL-ALT-DEL is a valid command in a production environment and have little concept of a proper backup and recovery procedure. But you can hardly blame them, as that is what they have been taught. I know several customers who take every new IT employee and put them through the mainframe department first to learn how to run a production system. The improvements in availability and performance can be staggering.

However, should there even be a mainframe department, as that smacks of separatism?

Will the mainframe have a future?

It is intriguing that this question keeps getting asked every couple of years. People keep predicting the death of the mainframe and then the next minute the analysts are telling us that it is alive and well. What is the truth?

Life used to be simple. The application ran inside the company. The network was owned and controlled by you, and people had never heard of a GUI. Then we had the biggest change in computing for decades – we gave the person in the street access to our systems. Immediately the mainframe was seen as dead (as it didn't run UNIX or TCP), was inflexible, took too long to develop applications and had a very old-fashioned interface. Hence the world moved into distributed systems and thought that this would be the universal solution to all computing problems.

At this point, of course, the world discovered that distributed is not actually as good as you were told it was going to be, as it simply moved the problems sideways and introduced major new ones such as the management of multiple platforms in multiple locations, and the rapidly growing concerns over power and cooling and carbon footprints. So when I travel the world today, all the customers are talking to me about thin clients, server consolidation and centralisation. They are also looking at the mainframe and deciding it should not be thrown away because:

- It supports UNIX – and LINUX.
- It supports TCP/IP.
- It can talk to any platform / any GUI.
- It is still the cheapest, most secure, most reliable platform on the planet – see www.arcati.com "The Dinosaur Myth."
- It still provides the best storage capacities and bandwidths – you don't have to move your data off the mainframe, just open it up to new applications.
- It has years of experience in running things properly – backup, recovery, performance, tuning, availability, security etc. – and these disciplines must not be lost.
- It is designed for new initiatives like autonomic and grid.
- It is designed to run multiple workloads concurrently, unlike DS, which is why VMWARE has grown so dramatically over the last few years as people frantically try to squeeze more work into one box.
- It is designed to run at 95% capacity (DS normally runs at 20-30% or less).

Unfortunately, everyone coming out of university/college only knows about LINUX, Java and C++, but you can use these to access a mainframe nowadays and you can (and should) teach them the disciplines of mainframe when they come on board as I recommend above.

Unfortunately, many mainframe people tend to think theirs is the only world and that nothing can be learnt from these young upstarts, which is, of course, total rubbish. It was exactly this attitude that nearly killed of the mainframe in the early days of DS as the mainframe manufacturers sat back and ignored the new developments in DS. I am glad to say that both sides are now realising that they can learn from each other. The DS guys can learn how to run a production system properly, and the mainframe guys can learn about openness and flexibility, for instance.

What do you do, though, if you have lost most of your mainframe gurus? I think you need to look at products and processes that have the "correct" way of working built into them. Look for products that analyse what is happening and give you advice on what to do about it / what jobs to run, and look at frameworks like ITIL®, which is where I want to go next.

The Business Perspective

Several years ago, I was involved in the design and putting together of what we call Business Service Management (BSM) – the concept of running IT from a business rather than a technical point of view. We looked around at what customers were doing and where the problems were, and it is no surprise that we kept hearing about business and IT alignment, moving IT from a cost centre to a value generator, etc.

At that time, we also looked around at the process frameworks that people were adopting and bet our money on ITIL becoming the worldwide standard. (If you think that is obvious today, please go back 4 years and ask what was happening then – ITIL, for instance, at that time was virtually unknown in the US.) In the meantime, compliance has become vital, we have a new International Standard for IT Service Management (ISO20000), and more and more people are looking at the combination of ITIL and CobiT to run their shops.

The great news now is that these predictions have come true and customers are seeing the benefits of BSM. Analysts are reporting back that customers can save 25% of the costs of running IT through using BSM[1].

1. (Forrester Research, Inc., "Implementing BSM: Keep The Big Picture In Mind If You Want To Reap The Full Benefits", T. Mendel, P. O'Neill, with J. Garbani, R. Iqbal, April 2006)

However, before you all rush off to do BSM this afternoon, I would like to make a couple of observations.

- You can align IT and business and still have chaos.
- You can implement ITIL and still have no business perspective.

I firmly believe that IT and business need to be locked together and develop a joint strategy. This obviously requires a two-way conversation between IT and the business. The business has to be able to express its priorities, its goals, its capacity plans, and its required service levels. IT has to be able to explain in easy language what is possible and what is not, and what the associated costs and risks are.

One of the major problems in the mainframe world is that we have been measuring what we call service level agreements (SLAs), but in fact they are no such thing. Most IT people love to measure technical metrics and key performance indicators (KPIs), and can produce reports and graphs that can tell you virtually anything about the infrastructure. Unfortunately, they frequently fail to do the one thing that they were originally designed to do, and that is tell us if IT is helping the business run properly.

Another problem is that many IT shops are still set up in silos. In one case it is networks, mainframes and distributed; in the next one it is application development, testing and operations etc. When I walk up to a cash machine, I don't really think about what infrastructure is driving it or who wrote the program – I just want my money. So why do we organise ourselves in a way that is totally alien to the services we are trying to deliver?

When we designed BSM, it was all about breaking down these barriers internally and externally, and the exploitation of the business knowledge in all that IT does from application design, through end-user experience to capacity planning etc.

The ageing problem

A common theme in industry journals is the "greying of the workforce." The experienced IT professionals are retiring and leaving the workforce, but the DBMS applications they developed are still mission critical. The universities are not churning out a "next generation" of mainframe literate computer science graduates, which presents a risk to companies with significant investment in the mainframe.

Many IT professionals lack the time or experience to analyse their environment and make intelligent decisions on how to optimise or recover their operations. This is true today because many companies have downsized IT staffs, resulting in many IT professionals supporting more applications and objects than ever before.

Frequently the IT professional is faced with supporting applications and databases in an environment where they have only basic skills. This will be exacerbated as the ageing workforce retires and is replaced by a new generation of IT professionals, who may not even be familiar with the mainframe platform, let alone the DBMSs running there.

Advisors

We cannot, therefore, ignore the mainframe environment; it continues to run a major part of the critical business applications and we need to ensure that these applications are performing optimally. Several years ago, the emphasis was on administrative tools for the set-up of new applications. The demand today is far more towards the optimisation of those systems, and performance and recovery tools are vital.

However, as discussed above, the skills may not exist to exploit these "point" tools properly. Hence the need has arisen for a series of solutions, which can provide advice and automation to an overworked, and probably less skilled workforce. This is why BMC Software has developed a range of Advisor solutions for the mainframe environment. Advisor capability goes beyond automation and autonomics – it offers intelligence to analyse the data and recommend the solutions for optimal results.

BMC Software delivers several types of Advisor functionality today:

- BMC SQL Performance for DB2 quickly identifies the most expensive SQL statements and makes tuning recommendations.
- BMC System Performance for DB2 dynamically tunes the system in response to varying workload, hence delivering the levels of service the business requires.
- BMC Database Performance for DB2 enables customization of automated statistics analysis to identify the specific objects that require maintenance.
- The BMC Recovery Managers for IMS and DB2 lead the DBA to the correct and quickest method of recovery.
- BMC Database Advisor for IMS proactively manages full-function and Fast Path database environments within and across IMS and z/OS sysplexes, predicts threshold-exceeding space and database performance events, and notifies the DBA of exceptions that require action.
- BMC Performance Assurance Suite for Mainframes delivers performance and capacity management solution for zSeries with predictions of performance while reducing time and effort required to get results and flags potential problems for drill-down analysis.
- BMC MAINVIEW AutoOPERATOR for z/OS helps streamline operations for greater service and enhanced productivity.
- BMC Batch Impact Manager helps you to ensure on-time completion of your critical business processes by proactively identifying potential missed SLAs in business service processes.
- BMC MAINVIEW Transaction Analyzer makes it easy to pinpoint problems by correlating and consolidating transaction information from different systems.

Some day-to-day examples

To try and illustrate what I am talking about, here are some examples from a typical IMS/DB2 shop.

- Your system is running slowly and the users are complaining. You are sure that if you only had the time and expertise, you could tune the system to make it go faster, but you are not really sure where to start. Do you pore over monitors, do you alter the buffering, do you add an index, do you look for the most disorganised tables or what?
- Rather than attacking the area you are most comfortable with, you should be using the SLAs and the business impact to highlight what are the services that are truly hurting, rather than the ones you think you should be looking at.
- Workload, unfortunately, is not constant, and hence you should be looking for tools that can dynamically react to the changing workloads and re-allocate resources as required. You need products that can determine where the fault lies – bad SQL, wrong buffers, missing or incorrect indexes, disorganised tables and databases etc., and proactively inform you about what you should be working on.
- You've had an error, which is impacting a key business service, but your maestro DBA is on holiday, and the new guy/girl doesn't know whether he/she should be running forward recovery, backout, point-in-time or any of those other things they learnt on the course and have now forgotten about. So you need products that will guide you to the fastest recovery with the least impact on the business.
- You have new compliance regulations and you have to prove that your systems are auditable and recoverable. Do you know how long it will really take to recover in an emergency, are you 100% sure that you can recover everything and can you prove that the whole change management process is totally compliant?

- A new web application is coming into production. Rediscover the lost art of capacity management. We can no longer afford to simply buy new servers for each application. Look at workload trends and history and use products with prediction and what-if capabilities to see what capacity is truly required / whether workload can be combined onto existing servers.

- You have a transaction which crosses multiple silos and multiple subsystems within the mainframe itself. How do you rapidly pinpoint the root cause of the performance slowdown, rather than indulging in the usual habit of finger-pointing and trying to shift the blame to someone else?

- A batch job terminates abnormally in the middle of the night. Do you wish to be woken at 3 o'clock only to find that the job is unimportant and can be fixed later in the day, or would you prefer the system to analyse the business importance and react accordingly?

Summary

So what does all that mean in today's world?

- We cannot afford to lose the disciplines which we have developed and matured over 20-30 years in the mainframe world. The new world desperately requires our help, but we cannot dive in saying "we did this years ago on the mainframe." That normally gets the new world people deeply annoyed and they don't listen to a word you are saying. We need to slip our knowledge in via devious underhand means! For instance, use products with built-in knowledge and advice, and use ITIL as a way in. ITIL is the de facto standard, and is based on practical customer experiences of what works and what doesn't – experienced mainframe people will have no difficulty in conforming with best practices for change, backup and recovery, performance, availability, capacity planning etc. Extending these disciplines to the whole environment and looking at everything from a holistic rather than a silo point of view is the logical path forwards.

- Remember that the mainframe is a key part of many critical business services. Your applications, infrastructure etc., need to be a part of the Configuration Management Database (CMDB), so that everyone has a common view of how it all hangs together. Don't let them build up a picture of how it all hangs together and leave you out. Contemplate reorganising yourselves round services rather than silos.

- Look at breaking down the barriers between application development and operations. Who decides where the new application will run? Who does the capacity planning? Are the applications truly production ready when they are "chucked over the wall"?

- Don't assume that because you have key knowledge in your head, that you should keep it there; we all need to share. Otherwise you will be perceived as unhelpful, inflexible and ripe for outsourcing. Look at ways of incorporating that knowledge into your processes and services, and what can be sensibly automated.

- Use the two most important questions in IT on every project – *why* and *how much is that worth to the business*? Keep asking until you get a sensible answer. Then you can go back to the business with a sensible cost-justified series of options, which should be explained in non-IT language.

- Include the mainframe in all reporting on availability and performance – you will hopefully knock the socks off the other platforms. Let them come and ask you why your stuff runs so well.

- Admit that their interface and programming is easier, even if you don't believe it. Compromise will win you more friends than argument.

About BMC Software

BMC Software delivers the solutions IT needs to increase business value through better management of technology and IT processes. Our industry-leading Business Service Management solutions help you reduce cost, lower the risk of business disruption, and benefit from an IT infrastructure built to support business growth and flexibility. Only BMC provides best-practice IT processes, automated technology management, and award-winning BMC Atrium technologies that offer a shared view into how IT services support business priorities. Known for enterprise solutions that span mainframe, distributed systems, and end-user devices, BMC also delivers solutions that address the unique challenges of the midsized business. Founded in 1980, BMC has offices worldwide and fiscal 2007 revenues of $1.58 billion. Activate your business with the power of IT. www.bmc.com.

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