FST Datacentre Roundtable

From butchers' thumbs to long hair and sandals via datacentre efficiency, the FST Data Centre Roundtable was nothing if not wide-ranging

GP Firstly, shall we start by trying to asses the impact of the current financial crisis upon your data centres?

GF Sure. I think the credit crunch has helped our business a great deal, mainly because a lot of firms are putting off their capital expenditure plans, delaying them, or essentially eliminating those plans, so they're trying to downsize. They are trying to eliminate products that are unnecessary and reduce their footprints where they can. One of the companies we're dealing with had very large in-house data centres, but they're doing some of their growth in our facility, so typically companies that built their own sites and didn't outsource any data centre facilities are now starting to outsource with us, so that's a big trend.

MD I think two or three years ago there was a gold rush to building, now it's about the balance sheet and whether it's the right app or the right platform or the right workload in the right centre. There's a lot more analysis around than we've seen previously.

GF You've also got a problem with huge legacy applications that were written in the 60s by people with long hair and sandals. You're never going to get a business case for modernising those in to a grid-type environment – you've got to leave them as they are.

DC One of the things we're looking to do is trying to find the cost of an app. So we can say, OK, it may cost £100m to run this app, but it's only generating £80m – that's a bad trade, let's get out of that.

MD We're calling it 'name and shame'. Initially there wasn't the type of forensic data available we have today, but now we can look at things like CPU utilisation, which previously had always been acknowledged as being head room. So in the current credit crunch we can ask about head room in CPU or power – why have you got such reserve and contingency and overrating of the platform and overrating? and that's all sunk cost. My point is there is a fundamental problem, you have to go fix it, so the 'name and shame' route has now started to provoke the issue so you're starting to put a price on the application, and what we can do is give the characteristics of the app and demonstrate its inefficiency – energy, space, wrong workload or wrong platform.

DC I think there's a fair amount of apps that shouldn't even be in our data centre, right?

MD Cloud?

DC Yeah! Just get them out!

JK To zoom this out to a bigger picture we are seeing firms are exploring all of their costs – every line item in their P&L. Again, what some of the savvy companies are doing is they're looking at their network costs, and they're looking at connectivity, who they need to connect with, if they've got off-site storage providers like third party archiving, and when you start to stack up your connectivity costs that often outpaces your spend in data centre facilities – especially outsourced facilities and so, when we engage companies we try to get them to look holistically at the big picture.

MD I think it's absolutely fundamental. With everything you've just spoken about, I would say without the instrumentation or telemetry we're driving blind, so you don't get your car without a dashboard that tells you what you can do, how fast you can go, how much fuel you have in the tank.

JK Tokyo to Chicago, to New York, to London, what does that cost? If you're an electronic trading firm, what does it cost to get market data for all the key vendors? Often when you add that up the data centre spend is actually a smaller piece of the pie than you think. So the first inclination is "I need to save money on data centre spend" but, when you look at the bigger picture a lot of the money that's wasted is on the network component.

GF I've thrown European directors of the server vendors out of rooms when they insist they can tell me how busy their servers are [not literally surely? ed]. No they can't! They can tell me how long the

Attendees:
Geoff Prudence - CIBSE FM Group - (Chairman) - ("GP")
MD - MD - American Bank - ("MD")
John Knuff - Director of Business Development - Equinix - ("JK")
Steve Ross - IT Production Director - ("SR")
Glen Fitzgerald - Principal Architect - Fujitsu - ("GF")
DC - MD - Large Financial Institution - ("DC")

programs running on their servers spend in the bloody idle loop. That's not how busy they are. They don't meter how busy the IO busses are. They don't meter what flux changes are going on inside the silicone memory – they don't know that! CPU utilisation – they don't know anything. It's a complete waste of time. It just tells you how efficient the operating system is.

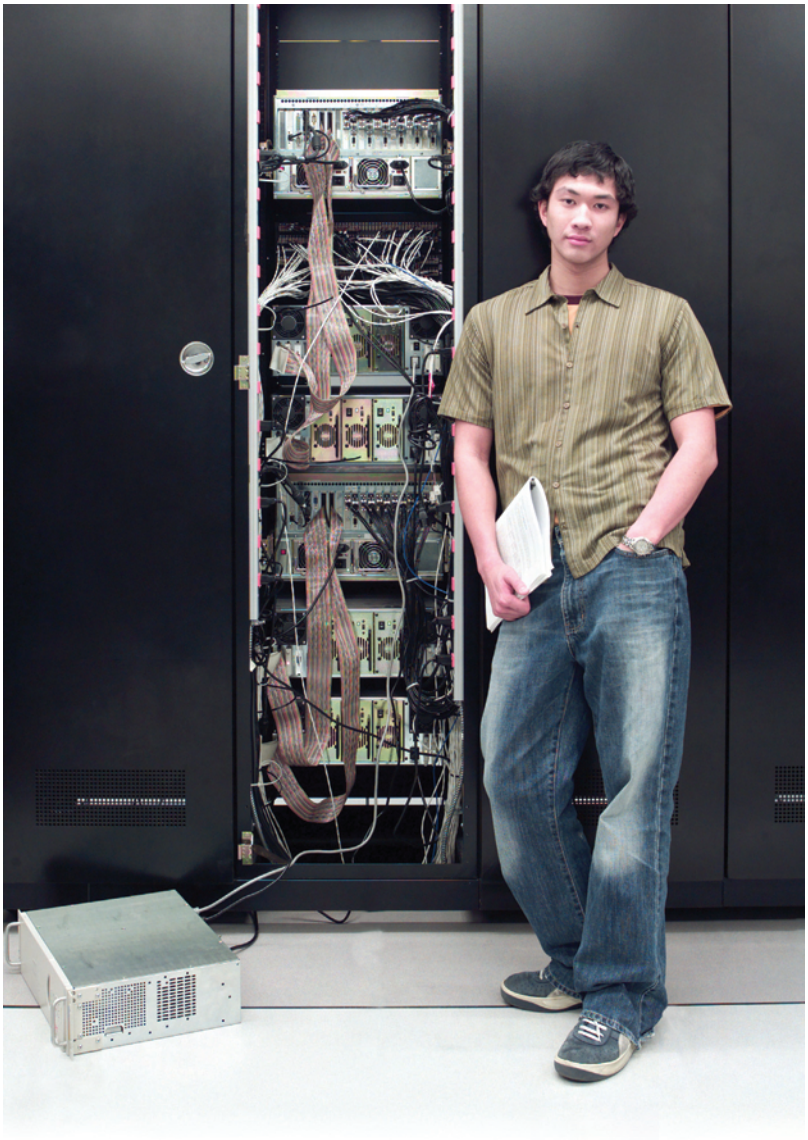
SR I'm worried that you can get people confused and are focusing on all the wrong measures. To learn something you've got to measure, but by measuring you're not necessarily learning. I'm interested in the value my user's get out of the servers rather than how hard the servers are working. By measuring the CPU it sounds a bit like trying to work out how busy a bus (red one not IO) is by measuring the engine idling. There is a relationship sure, but I might be more interested in how many passengers there are and how far they are travelling.

JK There's some truth there, but you have to start somewhere, and if you get a benefit – drill down and make some changes. Take CFD [Computational Fluid Dynamics software] – for our larger customers, it's expected now. It's not just something that's nice to have. Companies have to maximise their investment and we examine our best practices that occur globally and try to roll them out to all of our facilities worldwide. What happens next is the hard part. So finding the hot spots reworking the floorplan and then implementing changes in the facility is very difficult but it's where the rubber meets the road. If you've got 400 cabinets in a facility and you need ten more, you have to do this.

DC Right now I need 15 more.

Green Things

JK Well maybe you don't. Maybe you could consolidate some servers. You could upgrade some storage, you can get rid of some heat producing equipment and upgrade to more efficient and compact hardware that's where we see that value of CFD analysis. It's green and it's also expected now from our larger clients.



MD But wait a second – a data centre, in my view, is not an efficient building, right?

GF It's a temple to burning your electricity!

MD Historically we've only ever charged out on space, but we're shifting to charge on power. Why? Our data centre power is 20 per cent of the firm's energy bill and we're a big firm. Our data centre space is two per cent of our real estate.

GF We changed to a power consumption model about two years ago.

MD And that, I think, is the catalyst because I think more and more people even at home are becoming more aware of power and sustainability, and that in itself is a reasonable incentive.

GF The green thing depends who you're talking to. If you're talking to government or organisations that wish to advertise themselves as being green,

absolutely. Perhaps paradoxically the motor industry is very keen on being able to demonstrate green credentials and airlines too. I guess the polluter wants to be able to demonstrate how fluffy he is.

GP I think carbon trading will drive changes.

GF I think it will be regulatory soon.

MD So you're in the business of deriving revenue, and data centres help us derive revenue. You get revenue out of your data centres. So I think the industry needs more understanding and it does not need more regulation, but it needs more accreditation. I build a 10-megawatt facility. For me to get the maximum ROI out of that is to run it as hard as I bloody well can.

GF You've got to run it fully – you've got to run it hard! But I'm not sure that the legislation will be framed that way.

MD Now the issue that I think is not resolved and, again, because I think this lack of understanding with the powers that be who have settled on CRC [Carbon Reduction Commitment] and energy and all the bits that go after it. You know, you should be incentivised to run the facility best in class.

SR But you are incentivised in a way, by standard finances. You're just trying to be efficient, to sweat it as much as you can. That's your incentive. And if doing so achieves green targets as well that's great. I think that's the only way businesses will do real green things, when it makes financial sense to them.

GF I was hosting a guy from government at the launch of a new centre, and he said: "Bollocks! You're just doing it to save money" – and of course he's right, and why not? The two things go hand in hand – efficiency means you get the best return on investment and the minimum impact on the environment.

Changing Tiers

GP Before we move on, you have said there are opportunities to move to the service sector, but is there a balance between the in-house and the service managed option? Is risk exactly the same for both sectors?

MD We are aggressively looking at lower tiered facilities but here are fewer lower tiered facilities available, and that is a shortfall.

GF I agree. That's absolutely my experience – we have an over capacity of Tier 3 and 4 and under capacity of Tier 1 and 2.

MD Why are HR apps considered to be high tiered? Why are your real estate apps considered to be high tiered? There's stuff there that you wouldn't even have in these centres if you really understood what they are doing.

GF I gave a little presentation a few months ago to the CTO Council of the UK Government entitled "*Back to the Future – The Return of The Mainframe*". What you're seeing is the beginning of that process of this hardware and software stack becoming monitorable in the same way.

JK There's also the cost allocation. When you're responsible for allocating computing and storage costs across multiple lines of business, it's nearly impossible.

MD I absolutely agree with everything you've just said – you're drifting back in to an outsource discussion versus a managed service discussion, beause anything that has mainframe, has workload and everything else that goes in the mainframe, do you then park it in a third party site?

DC I think it comes down to a CFO discussion. Let's look at our real estate portfolio. We have too many of these – people or buildings – let's get out of them. Oh, by the way – there's a data centre in the basement!

MD I think the CFO has become more aware. Three years ago, four years ago it was – you've got to solve this issue, and people didn't look at life cycle then. I'm sure your focus is like ours now – far more on the life cycle cost of the data centre. Energy wasn't a primary discussion point 3 or 4 years ago. Location – well, we've got a building, we've got a lease. Actually, hey, why don't we use this one? Today, I think if you had a clean sheet of paper and you were starting from scratch, probably our data centre strategies would not represent what has been built to date.

GF In terms of a self-funding aggressive consolidation/virtualisation or whatever you want to call it project – we've almost given up trying to make the case because when you do that you always throw depreciation away. The kit that you were replacing before it needs to be replaced – often built in to the contract in terms of penalty clauses in terms of the customer who gets rid of it early, blah, blah, blah, blah, so our approach now is very different. It's very much create the capability, the correct service provision to that organisation, move stuff in to it as its refreshed – don't try and be aggressive about it because you just can't get the pay back.

JK A key driver is the M&A activity that's happening in the financial industry today. The firms don't want to run four different market data applications across multiple divisions. They want to try and consolidate that into two or preferably one, and so that's driving the retirement of some legacy apps and outsourcing to the SaaS or application service providers. We see this very heavily in our business. It's just easier to say 'this is the best common denominator for all of our divisions, I'm going to use this firm and it doesn't require building a new data centre'.

SR So you have seen a lot of direct customers?

JK Several that ran legacy apps in their own facilities. This M&A activity often drives what I call the man in the middle scenario. You've got Bank A that acquires Bank B and they've got to consolidate apps and reduce data centre footprints. That's not going to happen in the data centre of A or B. They need the provider in location C and with tangible savings it's something they can do more immediately. So the answer is often to outsource the applications – you can go to an ASP or SaaS model.

MD So you've seen – here we're all talking about an industry that's developing demand and you can raise financing for this?

JK Fortunately we recently raised over $300 million.

SR Is it difficult to fund alone, especially with this green agenda potentially adding extra start costs.

JK Well, it's difficult to keep up with demand, but I think it's because we service multiple verticals. You know, our financial industry growth last year was nearly triple digits and that was in one of the worst years in the financial markets.

DC So tell me about your sectors?

JK A lot of the financial industry growth was around electronic trading infrastructure. Market data volumes are driving firms to examine their connectivity costs and consider new vendors. When you look at your spend to acquire market data to get news feeds, and aggregate feeds from all your companies, that's usually 3 or 4 times what your global network or carrier backbone spend would be and that's what's driving a lot of our demand.

GF The only point I was going to make to that, but perhaps a more cynical point, is that we also see the same process, the acquisition of more and more capacity, I don't think I've ever seen an application turned off. They all get a lot smaller, but they never really disappear. They stay there until forever.

JK We see some get turned off and then back on again in a new form. Again, a lot of it is driven by the M&A activity, but what happens is a large firm buys the broker dealer side of a business. They come in, they take their trading facilities, redeploy the servers and put their own applications in, but they essentially just swap out their infrastructure.

Cloud

GP Can we talk about Cloud and security?

GF Oh God!

MD I think Cloud will be the weakest link in the application architecture. If you think about the lifecycle of an application and you think about status and all those good things, something will go outside the firm. It will be in a very low-tiered facility for the right reasons and it will become the weakest link in the application end to end. My point being I think it has to be very carefully understood what it is you're putting out into the Cloud.

JK I divide Cloud into three areas: compute resources, storage and network. The compute side I think was the easy part, and a lot of firms now utilise these compute Clouds and run a simulation somewhere offsite. That's great, that's easy, but there's not a lot of those applications out there that just strictly need compute resources and can be put in to a Cloud environment. What's difficult is you have to then shovel that data around, sometimes around the world, to follow time zones or different geographies for your lines of business. That's where it gets pretty sticky, and I think firms have to be extremely diligent when they look at outsourcing applications.

DC I think at the security end there's a whole set of legal issues associated with what happens after the security is breached and evidence of discovery or anything along those lines.

SR Is it also where the data is held? I have concerns about the location of data and how easy it is to know where copies are held, and which jurisdiction they are under. Not everyone seems to make it easy to find out.

JK There are very strict rules in several countries about what data can be shipped off-site.

DC So there are clear rules, right, but being able to define that this piece of data is of a particular type is hard.

GF It absolutely is hard and it's almost a moving target. Anecdotal again, but it took about 18 months to get a government organisation and a financial services organisation using the same set of agreements in different environments to agree to allow the sharing of a storage network between similarly marked/protectively marked applications. That's the burden. It's really, really difficult and it's not helped by the fact that the organisational balances are always all wrong because the guy whose responsible for proclaiming security goodness is never responsible for what's actually going to happen when he says "no", right? So I have met at a conference a security guy wearing a t-shirt that says: "The answer is no, now what's the question." It's a mindset.

DC It's easy to make those calls, right? Just say no!

GF So where's the motivation – where's the reward to say 'yes'? It's just not there and it's endemic within the industry, in

all its sectors. It's very, very difficult to have that conversation with the guy who can only lose if he says yes, but cannot lose if he says no.

GF The other trend that I can see is the fact that some of the ghoulish ambulance chasing, no-win no fee lawyers are beginning to clock on to the fact that this is going to be lucrative.

Show Me Yours

MD My view is selfish actually. I'd like to know how hard you sweat your centres in contrast to how we as an enterprise might sweat our centres.

JK Well it's important for us to not over-provision power so we look closely at provisioning versus utilisation. As you said your best efficiency is when you sweat a facility and that essentially means customers are getting a good return on investment because we don't utilise any of the power in any of our facilities – our customers do, so we look at it in a little different perspective as someone who runs their own facility. Does that make sense?

MD It does and the reason I'm asking a provocative question because it's a loaded one – I believe there's not enough commercial perspective in running a facility in organisations as there are in your site and I think the enterprises themselves could do with some commercial behaviour. They're not motivated in some respects to think commercially if they're motivated to think of risk.

DC I think everyone takes a haircut, right?

MD Just about everyone – there are so many haircuts it's like a barbers!

GP Do you find there is an issue of getting real good people, regardless of being within the service sector or when you're on the client's side – getting people to actually understand the risk? We had this discussion at a conference recently and I said there's a lot more people around in the market now and you can get them quite cheaply, but it still means you've got to pay a premium to get good people to understand the risks.

GF When we recruit it's a dangerous and difficult process... in this climate at the moment some very, very strange decisions are being made. One major supplier had a reputation for technical excellence, but has dropped a lot of its technical staff.

DC Because it's a CFO decision, right?

GF Well a very short-sighted CFO decision, and let me give you an example: it has a direct consequence for this [unnamed] organisation. We were in the middle of a deployment of a large number of desktops to somebody until they did that. Now there's none.

SR But the decision might be in line with the CFO's strategy.

DC But then that strategy is not easily discernible to the outside world and certainly not communicated so that you might understand it.

JK So your question – finding people – I think it's tough right now because I think the entire data centre industry globally is seeing a big upsurge in business and a lot of companies are growing and competing for similar talent across multiple geographies. We have a lot of key positions that have been unfilled for longer than we anticipated because there's a huge amount of demand for people with those skills.

GF We're beginning to lose people from our business on the sorts of, extended deals I wouldn't have believed possible in this environment – people on 50 per cent pay rises, things like that.

JK And you want to get someone with 10-15 years of experience.

GF This keeps coming back to the idea of having some form of certification. I think that's a very good idea but I would hate the process. I would hate it to become like a certified guy – I think it might well constrain opinion and thought process!

JK You have also got to be careful of the certifiers that are trying to promote their own platform.

SR But then again, how would you get these people to get the experience to get the skills?

JK A lot of them come from in-house. You can have a degree as mechanical engineer, electrical or civil engineer. You know, if you train them on a job, well that's expertise you can't acquire in our educational system.

GF There are career paths and mentoring schemes and all that kind of thing because an organisation like mine sells its people. We haven't got anything else apart from a few capital assets. I wouldn't put a guy in to the senior architectural role until he'd had that time in the role.

DC This may be a little provocative, but why should a bank run their own data centres? Why is that a core competence of what we do?

GF Thank you for acknowledging our core business message.

DC Seriously! With things like Google being able to run email better probably than most of us I think there's this convergence of getting out of the really expensive buildings and doing the hard stuff mechanically M&E-wise and just using it. If you buy software as a service, why not the infrastructure? What's the difference?