Oracle Next Generation Data Centre Index
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Foreword

By Luigi Freguia, Senior Vice President, Oracle Systems EMEA

This is the second cycle of the Oracle Next Generation Data Centre (NGD) Index. The results of Cycle 1 were revealed in May 2011, following research by Quocirca in February 2011. The research leading to this new study was conducted in November 2011.

The purpose of the Oracle NGD Index is to measure the journey of organisations as they move towards creating more efficient data centres and evolve their IT infrastructure to boost performance and reduce costs.

This second cycle of the research gives us a means of better understanding how organisations are responding to the issues surrounding the data centre, and throws up the explosion in “Big Data” as a key issue facing businesses across the region.

This data boom represents a significant opportunity for organisations to better understand their business and the threats and opportunities which exist. However, it also represents a major challenge. To cope with the volume and to make sense of it, companies must invest in technology and infrastructure on a significant scale.

In Cycle 2 of the NGD Index, some 949 organisations across Europe, Russia and the Middle East were interviewed by Quocirca. These organisations were classified as either “Large” (> $100 Million revenue) or “Very Large” (> $1 Billion), and were drawn from a variety of vertical industry sectors (among them telcos, utilities, financial services, healthcare, media, public sector and retail). Questions were crafted so that answers could be expressed as a number. The average of all the responses provide the overall Oracle NGD Index – a number on a scale from 0 to 10, where 10 represents the most sophisticated data centre strategies. Questions are split into three topic areas of Flexibility, Sustainability and Supportability, to provide further sub-indices.

Comparison between the countries common to both Cycle 1 and Cycle 2 shows that the overall Oracle NGD Index score has improved, from 5.22 to 5.58 – so progress is being made, in all countries, all industries and in all sub-indices.

Looking into the Cycle 2 results in more detail and comparing them with Cycle 1 results, throws up interesting insights across the EMEA region – for example, the Middle East has made quite remarkable progress in addressing the issues thrown up in Cycle 1.

But, more importantly, Cycle 2 results taken as a whole, underline the significance of the explosion in data volumes and sources that is being labelled “Big Data”, and throws up questions about the preparedness of businesses across the region to be able to exploit it to their advantage.

The richness and depth of information in the two Cycles of the Oracle NGD Index we have seen so far, have given some fascinating insights into the evolution of data centre strategies across the EMEA region. Our hope is that readers of this report can gain value from the information herein, as part of determining how best to marshal their data centre resources to maximise the business benefits to be gained from the forthcoming changes in both business and technology.
Executive Summary

The research for Cycle 2 (C2) of the Oracle NGD Index was carried out during November 2011 – nine months after the research for Cycle 1 (C1). Despite this relatively short period between the cycles, a number of significant changes have been discovered in technology adoption and in attitudes to investment in sophisticated data facilities.

The overall NGD Index has improved from 5.22 in C1, to 5.58 in C2. All three of the sub-indices (Flexibility, Sustainability and Supportability) also show improvement from C1 to C2, their averages being: Supportability - 5.24 (C1) to 5.64 (C2); Sustainability - 5.14 to 5.64; Flexibility - 5.27 to 5.46. The greatest gain here is clearly in the area of Sustainability. This was an area of concern in Cycle 1, so improvement is both welcome and necessary.

The all-round increase in performance should not be cause for complacency. There remain many great opportunities for organisations to continue to develop their data centres into world class facilities that deliver increased value through greater data handling capabilities and more in-depth understanding of customer relationships.

While the explosion in Big Data has been coming to a head over a number of years, it does seem that businesses have been caught off guard. The number of organisations with in-house only data centres is down from 60% in C1 to 44% in C2, while the number of those using at least some external data centre support to cope with volume has increased from 40% of respondents to 56% in C2. Meanwhile, more respondents are considering building a new data centre. Just 8% do not see a need for a new data centre in the foreseeable future, compared to 17% in C1. There has been a big leap in those who expect that they will need a new data centre within the next two years – up from 27% in C1 to 38% in C2.

These trends suggest companies are having to outsource data requirements to external data centre providers to help them cope with the waves of data being created, but that longer term, they would prefer to build their own dedicated data facilities. Perhaps driven by necessity, in the short term, buying is clearly seen as a quicker fix than building.

Given that investment, either through outsourcing or developing in-house data centre facilities, is going to be essential, it is no surprise that data is starting to move up onto the boardroom agenda. Indeed, Oracle believes it is Big Data that will truly make the board sit up and take notice of IT. The increase reported between the C1 and C2 overall NGD Index supports this interpretation.

Far fewer (22%) of the C2 respondents cited “business growth” as their reason, than did so in C1 (36%). Consolidation remained the most common response, holding steady at 36%, while the option “limitations of existing facilities” was propelled into second place, increasing from 26% to 36% from C1 to C2. This latter factor appears to suggest the challenge of handling data is around volume currently. See top graph on page 6.

Country Comparisons Oracle NGD Index Cycle I to Cycle II
Methodology
Quocirca carried out 949 telephone-based interviews through November 2011, across the EMEA region – UK, Ireland, France, Italy, DCH (Germany/Switzerland), Iberia (Spain/Portugal), Benelux (Belgium/Netherlands/Luxembourg), Middle East (Saudi Arabia/UAE), Nordics (Denmark/Finland/Norway/Sweden), and Russia. Organisations were large (> $100 Million revenue) or very large (> $1 Billion). Questions were crafted such that answers could be expressed as a number between 0 and 10 – the average of all the numbers is the overall Oracle NGD Index. The questions were split into three topic areas – Flexibility, Sustainability, Supportability – giving sub-indices which show Index numbers for each topic.

Note: Due to some differences in the countries that were surveyed in C1 and C2, the figures in this Executive Summary and the report that follows have been “normalised” to make a fair comparison possible. The C1 study included USA, which was not included in C2. However, C2 did include Ireland and Russia, which were not part of the C1 research. Therefore, the normalised figures have the responses from all three territories removed. Before normalisation, the overall NGD Index in C1 was 5.28, as stated in the Foreword; with the USA results taken out, the overall NGD Index becomes 5.22.

Case Study:
British Board of Film Classification
The British Board of Film Classification (BBFC) is an independent, not-for-profit media regulator.

Challenges
• Retain a digital copy of all material that has been classified since 1984
• Establish and operate a bespoke facility to digitise VHS and DVD content, amounting to approximately 200,000 VHS tapes and 60,000 DVDs
• Ensure digital material can be stored in an efficient, safe and cost-effective manner
• Implement a low-cost, low-maintenance solution to reduce cost of management support

Key benefits
• Secure storage of content, using Oracle’s StorageTek SL500 tape library
• Immediate retrieval of VHS video or DVD content, a process which previously took up to three days
• Offering a digitising service to external customers, thus expanding overall business

Dave Harding, Head of Technology, British Board of Film Classification: “With our digitisation project and Oracle’s StorageTek SL500 tape library, we now have the confidence to preserve all classified DVDs and videos for the long-term.”
Has the ‘Big Data’ boom caught businesses off guard?

Organisations can gather information about customers through every transaction and enquiry they deal with and have sight of. They can also better understand their own business by scrutinising the data created by every employee, process and transaction within the organisation. And, of course, social media generates huge amounts of unstructured data among which can be useful intelligence about an organisation’s products, services or customers. However, being able to efficiently store, retrieve and analyse such data to drive better business competitiveness represents a major challenge. This calls for sophisticated IT infrastructures, and based on the results of the NGD Index research, the question has to be asked: are businesses ready for the data deluge?

Findings:

• The number of organisations with in house only data centres is down from 60% in C1 to 44% in C2
• Those using some external data centres to cope with volume has increased from 40% of respondents in C1 to 56% in C2
• “Business growth” as a reason for data centre investment has fallen sharply: from 330 respondents in C1, where it was the clear second choice behind “consolidation”, to just 209 in C2
• “Limitations of existing facilities” has risen to become the second most cited reason for investment in new data centre facilities.

The findings suggest many organisations have been forced to outsource data requirements because their existing infrastructure is unable to deal with the sudden increase. Outsourcing has provided them with the necessary elasticity to cope with growing volumes. Longer term however, organisations are looking to build their own data centre facilities.

Industry perspective:

In almost every area, the telco industry leads the way in the NGD Index. Only in the area of sustainability does it find itself second to utilities, with comparative index figures of 6.44 against 6.29. Performing least well in this category was retail at 4.77, then media at 5.09. However in the other two sub-indices, flexibility and supportability, telco has a healthy lead over all other industry verticals, scoring 6.31 in flexibility and 7.23 for supportability. Public sector performed least well in both of these categories, scoring 4.92 in flexibility, and 4.5 in supportability, narrowly behind retail in each case.
The overall industry averages between C1 and C2 show in fact that utilities has closed the gap on telco, with the latter increasing from 6.55 to 6.67, while the former increased from 5.91 to 6.28. Retail was in last place in both C1 and C2 - 4.43 and 4.72, and actually lost a small amount of ground on the next lowest, which is public sector 4.44 and 4.81.

That telecoms has been found to have such a strong lead in data centre sophistication is consistent with consumer usage trends. A boom in consumer data and social network use on mobile devices and via on-demand home entertainment, as well as hosted apps for small business and the reselling of IT infrastructure-as-a-service, has all made its need to address data centre efficiency more paramount than other industries. As 4G networks become a reality, this trend is only expected to increase.

Since there has been improvement from C1 to C2, it’s clear that other industries are also waking up to the need for better management and understanding of data. Public sector may be seen as a laggard in the current results, but this sector will increasingly look to move local and central government services online in search of efficiencies and that will require improved data centre infrastructure. ‘Big Data’ will call for adaptation even within the public sector.

**Case Study:**

**Immonet GmbH**

Immonet is one of Germany’s leading real estate websites with more than 2.6 million monthly users.

**Challenges**
- Ensure IT infrastructure supports significant growth while maintaining performance
- Centralise and consolidate real estate and financial data for efficiency
- Improve agility for capitalising on real estate market changes and trends
- Create forecasting scenarios that enable the company to be more responsive

**Key benefits**
- Reduced IT energy costs by 90% and lowered total cost of ownership by 75%
- Gained the ability to access data up to 100 times faster, enabling the evaluation of data within minutes instead of weeks
- Established a single repository for data, using Oracle Exadata Database Machine X2-2
- Connected nine relevant source systems to effectively manage a data volume 350% growth

**Christian Maar, CEO, Immonet:**

“Oracle Exadata Database Machine is the most highly performing solution on the market. Oracle is the only company that offers a one-stop-shop approach for data warehousing, as it can deliver everything from hardware and databases, to business intelligence solutions and implementation.”

**THE ORACLE PERSPECTIVE:**

The sheer scale of the Big Data explosion has clearly still found many businesses unprepared.

It’s a real challenge for many organisations to harness all of their data and turn it into the valuable asset it could be. It does appear that many have been caught out and are only now working towards changes in the data centre that will enable them to meet the challenge of Big Data and make themselves more competitive.

The easiest way to manage this data is with a centralised repository, whether that is a proprietary data centre or a shared facility. Applications and employees increasingly work in the cloud and there is little reason for data to reside on endpoints or across fragmented silos. We advise businesses to find a solution which enables them to have clear sight of their data, and to simplify the process of managing it. If businesses don’t conquer their spiralling Big Data challenge now, they will forever be playing catch-up once it reaches critical mass.
Data is becoming a boardroom issue

In times of economic hardship, the ability to get sign off on major IT projects is usually limited to truly transformational changes. It is perhaps an indication of the scale of the challenge and the opportunity presented by Big Data that there seems to be real momentum behind investing in new data centre facilities, as we have seen above. Progress is ongoing, as shown by the uplift in the overall NGD Index from 5.22 to 5.58. These are major financial commitments and of a scale that would normally be for discussion at board level.

More than 90% of respondents recognise the need for a new data centre, but the need has become more immediate in many cases, with some 60% citing either within two years (38%) or within 12 months (22%) as their timescale.

Findings:
• Just 8% see no need for a new data centre in the foreseeable future, down from 17% in C1.
• The “limitations of existing facilities” has become a far more prevalent reason for investment, increasing from 237 to 346 respondents from C1 to C2.

Case Study:
TIMWE is a leading monetisation solutions company in the mobile marketing, entertainment and financial industries. TIMWE reaches three billion mobile phone users worldwide.

Challenges
• Process thousands of digital transactions per day
• Analyse data, obtain backup information for real-time decision-making and reduce report delivery time, obtaining fast, simple and rigorous analysis of clients

Key benefits
• Enabled real-time delivery of customer reports, bringing considerable time and money savings, by use of Oracle Database and Oracle Exadata Database Machine
• Increased the speed of query responses by a factor of 40, reduced analysis time from two days to 30 minutes

Paulo Salgado, CTO, TIMWE:
“The highly competitive communications industry demands a robust, flexible, and scalable IT infrastructure with the ability to support real-time analysis of thousands of daily transactions. Oracle Exadata Database Machine makes this possible.”

The Oracle Perspective:
IT has been vying for a place at the boardroom table for some years, and Big Data will be the issue that sees it finally achieve that prominence. Investing in data centres is not a decision organisations take lightly, but there is clearly a greater appetite now for taking the next step than there was at the time of the C1 research. There can be no doubt that data and IT issues are now firmly on the boardroom agenda - and rightly so given the value now attached to data. We feel it is no exaggeration to say the board should understand their data in the same way they understand their finances.

It is interesting however that companies have changed their outlook on what they hope to achieve by building new data centre facilities. Business growth ought to be a goal for every organisation, but with many business markets still in the doldrums, the apparent reduced importance of business growth as an objective is perhaps a sign that companies are seeking to draw their horns in a little – to find greater efficiency in what they already have, before setting out to achieve more stellar targets.

It may also signal a realisation that they must get on top of their data challenge before they can start taking action based on what that data tells them.

This is mirrored in the findings in respect of increased use of external data resources - businesses are outsourcing to help them get through short term difficulties, in anticipation of better times around the corner, when more permanent arrangements can be made.
Sustainability is back on the agenda

The first NGD Index research discovered some quite disappointing attitudes towards the sustainability of data centres. Quite simply, many organisations were paying lip service to these issues. While most (84%) did have a sustainability statement, some 44% had no plans to support it. There were also uneven standards in regards to monitoring energy usage, with almost a third of data centre managers (31%) not seeing the energy bill, and 11% who doubted that anyone sees it.

There has been an improvement in C2, as evidenced by the increased overall score for the sustainability sub index, which rose from 5.14 to 5.64.

Findings:
- Around a quarter of respondents (24%) have no formal plans to improve sustainability in the data centre – this was more than one third (34%) in C1.
- Only 6.4% have no sustainability plan in place, compared to 13.2% in C1.
- More than half (52%) now have a full or basic sustainability statement in place and a plan to support it.
- 24.5% now see the energy bill, compared to 16.1%, and a further 10% more than in C1 are using direct energy monitoring and metering.
- A third (32.7%) are using less space than before in their data centres.
- Free air cooling (45%) and DC power (33%) are among the main technologies that respondents are looking to implement.

The Oracle Perspective:
While we welcome the fact that the new research points to sustainability becoming a more important issue, there is still a long way to go across the board, in order to make the data centre more energy efficient.

There are simple steps, such as monitoring energy usage, that many businesses have still failed to take. In neglecting this, it therefore becomes impossible to manage it. Realistic targets for improvement cannot be set without this knowledge. Monitoring can also reveal anomalies, such as faults in a particular piece of equipment that cause it to start drawing more power. Nor is there purely an environmental gain to be made: savings made in this area go directly onto the bottom line.

Looking at sustainability geographically, the Nordics and DCH (Germany/Switzerland) lead the way, each with a sustainability index score of 6.57. Benelux follows with 5.76, while the UK is slightly below average on 5.4. Russia performs least well in the C2 results, with an index score of 4.3.
A commitment to consolidation and virtualisation

Organisations can manage the Big Data boom more effectively by embracing new technologies. Virtualisation is a key innovation and the evidence suggests increasing numbers of companies are turning in this direction to improve the efficiency of their infrastructure. The research also suggests increased use of advanced analytics is helping to provide visibility on future workload requirements, enabling data centre managers to plan more accurately for the future.

Findings:
• There is growth in, and greater sophistication around the use of, virtualisation. 38% of respondents have less than 30% of their IT estate virtualised - this is down from 49% in C1
• There are some improvements in server utilisation levels. More companies know the average server workload utilisation level in C2 than did in C1, with 11.5% who didn’t know, now reduced to 5.6%. However only 27% said server workload utilisation was more than 50%
• Visibility into future workload requirements is improving. Use of straight line predictions and advanced analytics is on the increase: 28% and 11% respectively in C1 have risen to 35% and 15% in C2
• 22% of C1 respondents had little in the way of systems management in place; however this has improved in C2 to just 13%
• Tape is making a comeback. 42% of respondents in C2 have already or are looking to deploy tape for data access, performance, security and availability - up from 34% in C1

THE ORACLE PERSPECTIVE:
There is clearly scope still for businesses to build efficiency into their data handling. Virtualisation is taking place, but utilisation is staying at relatively low levels. This points towards organisations still taking a one application per environment approach, rather than moving towards an ‘elastic’ environment of a shared infrastructure or private cloud. With more virtualisation coming through, it’s to be expected that more consolidation will also occur over time. Organisations have little in the way of systems management in place, which could add to complexities when moving to new technologies or expanding their IT infrastructure. Systems management can in fact be seen as the lynchpin for data centres, and experience shows those with good systems management perform better than those with none in place at all. The improvement in visibility of future workloads shows that IT managers are beginning to realise that the dynamic nature of workloads and of pressure from the business requires a more measured approach.
Conclusion

The unique challenge of Big Data represents the coming together of many prevalent IT trends – the growth in social networks, connected applications, devices, systems and individuals in both the consumer and business world, creating vast amounts of structured and unstructured data through the course of everything they do, both on and off the corporate network.

Mining, understanding and acting upon that data holds the key to business success and that process must begin in the data centre.

As such it is encouraging to see steps – albeit small steps in some quarters – being made towards managing the explosion of Big Data and issues around sustainability. Businesses have clearly recognised a need to understand, but first capture and control, the vast amounts of data created by their business and many are looking at a combination of short-term need and longer term planning. They are looking to outsourced solutions in the short-term while planning long-term to build their own facilities and capabilities.

The short term component of this dual approach suggests many businesses realise the need is pressing and they do not have the luxury of time to address the escalation of data. Miss the wave now and they will always be playing catch-up, such is the exponential rate of growth.

The hugely respected Tim Berners-Lee recently wrote, in The Times (UK) in December 2011, that “data is the new raw material for the 21st century.” This is not hyperbole. Wrestling with Big Data is going to be the single biggest IT challenge businesses face over the next two years. But it is also the single biggest opportunity for those businesses who stand to gain most from better understanding what they already do.
If you would like more information on the Oracle Next Generation Data Centre Index, or would like to speak to a member of Oracle’s team, then please get in touch using the following contact details:

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