# APPENDICES

## *Appendix A*

List of Internet Data Centre Companies in Malaysia
(Source : HSPstreet.com, http://www.hspstreet.com)

1. Asia Online, Ltd.
2. AsiaHosting.com (BJ Webvertising)
3. DataOne (Asia) Pte Ltd
4. EMERGE Systems (M) Sdn Bhd
5. Free Net Business Solutions Sdn Bhd
6. HeiTech Padu Berhad
7. High-Tech ASP Sdn Bhd
8. Hileytech Sdn Bhd
9. IPXcess Dotcom Sdn Bhd
10. Jaring
11. Malaysia Online
12. Maxis Communications Berhad
13. Netmyne (Telekom Malaysia)
14. Sabah.Net
15. Silicon Internet
16. Skali
17. TIME dotNet Berhad
18. TMnet Operations, Telekom Malaysia
19. Techbyte (M) Sdn. Bhd.
20. VADS Bhd (CommerceCity )
21. Via Communication Network Sdn Bhd
22. WebServer.com.my
23. Myloca
24. Solsis
25. NTT-MSC

## *Appendix B*

## Questionnaire for Internet Data Centres

| Screening questions (please circle) | Is your iDC a Commercial iDC? | | Yes | No | |
|---|---|---|---|---|---|
| | How many customers you have currently? | | <3 | >2 | |
| | | | Freq | % | Value for customer |
| A. Location and Environment | | | | | |
| Geographical location | City | | | | Statistical |
| | Suburb | | | | |
| | MSC | | | | |
| Environment | Lightning protection | | | | Availability |
| | Natural disaster free | | | | |
| B. Infrastructure | | | | | |
| Building Layout | Floor space (sq ft) | <5000 | | | Scalability |
| | | 5001-10000 | | | |
| | | >10000 | | | |
| | Organised racking system: | Open rack | Standard | | Security |
| | | | By demand | | |
| | | Locked rack | Standard | | |
| | | | By demand | | |
| | | Private Caging | Standard | | |
| | | | By demand | | |
| | Structured electrical cabling: | Under floor trunking | | | Responsiveness |
| | | Overhead Tray | | | |
| | Raised Floor | | | | Availability |
| | Dedicated areas for: | Internet access nodes | | | Responsiveness |
| | | Server racks | | | |
| | | Testing and staging | | | |
| | | Temporary storage | | | |
| | | Tape room | | | |
| | | Network Operating Centre (NOC) | | | |
| Facilities | Separate electrical feeder(s) from the utility provider | | | | Availability |
| | At least 2 means of electrical distribution in the Data Centre | | | | |
| | Voltage surge suppresser | | | | |
| | Harmonics filter(s) | | | | |
| | UPS availability | | | | |
| | UPS standby duration (minutes) | 1-30 min | | | |
| | | 31-60 min | | | |
| | | >1 hr | | | |
| | UPS blackout alert | | | | |
| | Genset availability | | | | |
| | standby duration (hrs) | 1-10 hrs | | | |
| | | >10 hrs | | | |
| | automatic changeover | | | | |
| | 24-hour CCTV monitoring | | | | Security |
| | Access Control type | card | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | finger print | | | |
| | | iris scan | | | |
| | | others | | | |
| | Security guards | Compound | | | |
| | | Building | | | |
| | CMS (intrusion alert) | | | | |
| | Heat & smoke detectors | | | | |
| | Portable fire extinguishers | | | | |
| | Gas-based fire suppression | | | | |
| | Remote BOMBA alert | | | | |
| | Air Conditioning with redundancy | | | | Availability |
| | Air Conditioning Temperature 18 - 22 degC | | | | |
| | Humidity 45% - 50% | | | | |
| | Staff Facilities - Rest area | | | | |
| | Staff Facilities - Pantry | | | | |
| | Staff Facilities - Personal safety | | | | |
| **C. Services offered by IDC** | | | | | |
| co-location | co-location | | | | Statistical |
| managed services | web hosting | | | | |
| | ASP | | | | |
| | Total Solutions | | | | |
| | Value added - customised | | | | |
| **D. Customer segment market** | | | | | |
| Brick & Mortar | Government bodies | | | | Statistical |
| | Education | | | | |
| | Banking | | | | |
| | SMI | | | | |
| | NPO | | | | |
| | Tourism | | | | |
| | Software House | | | | |
| | Hardware House | | | | |
| | MNCs | | | | |
| | ICT Service Provider | | | | |
| dotcoms | e-portal | | | | |
| | ASP | ; | | | |
| **E. System & Network Infrastructure** | | | | | |
| Connectivity | multiple carriers - telco | 1 TELCO | | | Availability |
| | | > 1 TELCO | | | |
| | multiple carriers - ISP | 1 ISP | | | |
| | | > 1 ISP | | | |
| | SLA with telco | SLA | | | |
| | | UNERSTANDING | | | |
| | SLA with ISP | SLA | | | Availability |
| | | UNERSTANDING | | | |
| | Types of connectivity from telco | Fibre optic | | | Cost saving |
| | | ISDN | | | |
| | | Copper line | | | |
| | How many internet lines available for clients | <3 LINES | | | Availability |
| | | UNLIMITED | | | |
| | Internet connection speed from IDC to Telco | <10Mbps | | | Cost saving |
| | | >10Mbps | | | |
| System & Network | How often do you monitor / | Daily & more | | | Security |

| | | | | | |
|---|---|---|---|---|---|
| security | analyse the firewall logs? | Weekly | | | |
| | | Monthly | | | |
| | | Depends on SLA | | | |
| | Do you have an in-house network security team / 3rd party security service? | in house | | | |
| | | in house and external | | | |
| | What other than the firewall that your company is able to detect unauthorised access? | IDS | | | |
| | | IDS and more or others | | | |
| | How often do you perform the system backup? | Daily & more | | | |
| | | Weekly & more | | | |
| | | Monthly & or by demand | | | |
| | How many people know about the administration password? | 3 or less | | | |
| | | More than 3 | | | |
| Commerce security | How do you guard & validate the authorization of data exchanges? | SSL, VPN, MEPS | | | |
| | | OTHERS | | | |
| Data security | How often do you perform data backup? | Daily & more | | | |
| | | Weekly & more | | | |
| | | Monthly & or by demand | | | |
| | Do you store at least a copy of latest backup media offsite? | Yes | | | |
| | How quick is the response in the event of a disaster? | Within 1 hour | | | Responsiveness |
| | | Within 3 hrs | | | |
| storage capacity | How do you ensure scalability? | Have bigger IDC space | | | Scalability |
| | | Capacity planning | | | |
| | | Constant monitoring by system; adopt latest technology | | | |
| | | Use modular and scalable storage solution. | | | |
| | | Not sure / No comment | | | |
| | Do you implement Storage Area Network? | Yes | | | |
| | | Planning | | | |
| **F. Data Centre Management & Operation** | | | | | |
| Service Management Centre (Call Centre) | Is the call centre staffed 24/7? | CC & NOC | | | Service support |
| | | ONLY NOC | | | |
| | Do you have first level support for all alerts, incidents & problems, first level contacts for customers? | Yes | | | |
| | How quick is the average response time to a complaint? (minutes) | within 15 minutes | | | Responsiveness |
| | | within 30 minutes | | | |
| | | within 60 minutes | | | |
| | | within 2 hours | | | |
| Service Monitoring & Maintenance | Do you have dedicated management and monitoring tools for all operational managed services? | Yes | | | Availability |
| | What is the frequency of reporting to the customers on the system's performance? | daily or by demand | | | Service support |
| | | weekly or by demand | | | |
| | | monthly or by demand | | | |
| | | ad-hoc | | | |
| | Basic Monitoring | | | | Availability |
| | - Packet loss monitoring | Yes | | | |
| | | By demand | | | |

| | | | | | |
|---|---|---|---|---|---|
| | - view log files | Yes | | | |
| | | By demand | | | |
| | - Hard disk usage monitoring | Yes | | | |
| | | By demand | | | |
| | - CPU usage monitoring | Yes | | | |
| | | By demand | | | |
| | - Memory usage monitoring | Yes | | | |
| | | By demand | | | |
| | Proactive monitoring | | | | Availability |
| | - trends monitoring | | | | |
| | - automated responses to given conditions | | | | |
| | - new patches / service packs firewall monitoring for intrusions | | | | |
| | How often do you conduct meetings with your customers? | daily or by demand | | | Service support |
| | | weekly or by demand | | | |
| | | monthly or by demand | | | |
| | | ad-hoc | | | |
| | | other department manage | | | |
| | What is the ratio of customer/ IDC personnel : target / optimum? | target: 1 to <50 servers | | | |
| **G. Other questions** | | | | | |
| Reasons customer acquire iDC services | Complexity of IT architecture & software | | | | Statistical |
| | Better use of space | | | | |
| | Let experts do the job | | | | |
| | Focus on core competencies | | | | |
| | Complexity of IT architecture & software | | | | |
| | Business / Operation risk | | | | |
| | Specialization | | | | |
| | Better e-business performance | | | | |
| | More secured infrastructure | | | | |
| | Healthier cash flow ( factor of amortization, peak initial capital investment) | | | | |
| How much do you think is the total estimated cost savings in value and in percentage by each of your customer after they engage in your service? | <50% operating cost | | | | |
| | >50% operating cost | | | | |
| | no comment | | | | |
| What do you think is the greatest selling point of your IDC? | competitive pricing | | | | |
| | excellent & flexible services | | | | |
| | great IT infrastructure | | | | |
| | value for money | | | | |

## *Appendix C*

Questionnaire for Internet Data Centre Customers

| Screening questions (please circle) | Acquires at least one of the services offered by iDC? | Yes | No |
|---|---|---|---|
| | At least 3 months of experience dealing with iDC? | Yes | No |
| | | Findings | |
| | | Freq | % |
| A. IDC customers Business Category | Government bodies | | |
| | Education | | |
| | Banking | | |
| | SMI | | |
| | NPO | | |
| | Tourism | | |
| | Software House | | |
| | Hardware House | | |
| | Retail shops | | |
| | Consultancy | | |
| | Others (Brick & Mortal) | | |
| | e-portal | | |
| | ASP | | |
| | Others (dot com) | | |
| B. Reasons to outsource | Cost reduction - get % & value of savings | | |
| | Better use of space | | |
| | Let experts do the job | | |
| | Focus on core competencies | | |
| | Complexity of IT architecture & software | | |
| | Reduced Business / Operation risk | | |
| | Specialization | | |
| | Better e-business performance | | |
| | More secured infrastructure | | |
| | Healthier cash flow ( factor of amortization, peak initial capital investment) | 1 | |
| C. Services acquired from IDC | Co-location | | |
| | Web hosting | | - |
| | ASP | | |
| | Total Solution | | |
| | Dedicated hosting | | |
| D. Most important criteria looked for in IDC: | Availability | RANK 1 | |
| | | RANK 2 | |
| | | RANK 3 | |
| | | RANK 4 | |
| | | RANK 5 | |
| | Security | RANK 1 | |
| | | RANK 2 | |
| | | RANK 3 | |
| | | RANK 4 | |
| | | RANK 5 | |

| | | | | |
|---|---|---|---|---|
| | Service Support | RANK 1 | | |
| | | RANK 2 | | |
| | | RANK 3 | | |
| | | RANK 4 | | |
| | | RANK 5 | | |
| | Responsiveness | RANK 1 | | |
| | | RANK 2 | | |
| | | RANK 3 | | |
| | | RANK 4 | | |
| | | RANK 5 | | |
| | Customisability | RANK 1 | | |
| | | RANK 2 | | |
| | | RANK 3 | | |
| | | RANK 4 | | |
| | | RANK 5 | | |
| Satisfaction Level on IDC Services | Availability | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Security | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Service support | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Cost effectiveness | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Responsiveness | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Customisability | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Satisfaction on SLA compliance | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |
| | | Very unsatisfied | | |
| | Meet outsourcing objectives | Very satisfied | | |
| | | Satisfied | | |
| | | No comment | | |
| | | Not satisfied | | |

|  |  | Very unsatisfied |  |  |
|---|---|---|---|---|
| E. Future expectations from IDC: | Remote administration |  |  |  |
|  | Stronger technical support / IDC personnel |  |  |  |
|  | Bigger bandwidth |  |  |  |
|  | More competitive Pricing |  |  |  |
|  | Higher availability / uptime |  |  |  |
|  | Better customer support and more responsible |  |  |  |
|  | No comment / so far so good |  |  |  |
| F. Problems dealing with IDC | Lack of commitment in providing services |  |  |  |
|  | Slow response time and lack of customer support |  |  |  |
|  | Rely too much on 3rd party vendors - Lack of in house qualified personnel |  |  |  |
|  | Slow on-line connections Bandwidth problem |  |  |  |
|  | Low security/ firewall |  |  |  |
|  | SLA unsatisfaction |  |  |  |
|  | Low availability |  |  |  |
|  | No comment / so far so good |  |  |  |
| G. Would you recommend others to subscribe to IDC services and why? | Yes, would recommend IDC services |  |  |  |
|  | No comment |  |  |  |
|  | Cost effectiveness / cost savings with better cash flow bring to higher business efficiency |  |  |  |
|  | Good IT infrastructure |  |  |  |
|  | IDC Specialisation / expertise |  |  |  |
|  | Good and flexible services |  |  |  |
|  | Less hassle / problem / risk |  |  |  |
|  | Focus on Core competencies hence greater business efficiency |  |  |  |

## Appendix D

### Summary of findings for iDCs

| | | | | Freq | % |
|---|---|---|---|---|---|
| **A. Location and Environment** | | | | | |
| Geographical location | City | | | 1 | 11.11% |
| | Suburb | | | 3 | 33.33% |
| | MSC | | | 5 | 55.56% |
| Environment | Lightning protection | | | 9 | 100.00% |
| | Natural disaster free | | | 9 | 100.00% |
| **B. Infrastructure** | | | | | |
| Building Layout | Floor space (sq ft) | <5000 | | 3 | 33.33% |
| | | 5001-10000 | | 2 | 22.22% |
| | | >10000 | | 4 | 44.44% |
| | Organised racking system: | Open rack | Standard | 2 | 22.22% |
| | | | By demand | 5 | 55.56% |
| | | Locked rack | Standard | 8 | 88.89% |
| | | | By demand | 1 | 11.11% |
| | | Private Caging | Standard | 3 | 33.33% |
| | | | By demand | 6 | 66.67% |
| | Structured electrical cabling: | Under floor trunking | | 8 | 88.89% |
| | | Overhead Tray | | 1 | 11.11% |
| | Raised Floor | | | 8 | 88.89% |
| | Dedicated areas for: | Internet access nodes | | 8 | 88.89% |
| | | Server racks | | 9 | 100.00% |
| | | Testing and staging | | 9 | 100.00% |
| | | Temporary storage | | 6 | 66.67% |
| | | Tape room | | 7 | 77.78% |
| | | Network Operating Centre (NOC) | | 9 | 100.00% |
| Facilities | Separate electrical feeder(s) from the utility provider | | | 6 | 66.67% |
| | At least 2 means of electrical distribution in the Data Centre | | | 9 | 100.00% |
| | Voltage surge suppresser | | | 8 | 88.89% |
| | Harmonics filter(s) | | | 6 | 66.67% |
| | UPS availability | | | 9 | 100.00% |
| | UPS standby duration (minutes) | 1-30 min | | 6 | 66.67% |
| | | 31-60 min | | 1 | 11.11% |
| | | >1 hr | | 1 | 11.11% |
| | UPS blackout alert | | | 9 | 100.00% |
| | Genset availability | | | 9 | 100.00% |
| | standby duration (hrs) | 1-10 hrs | | 2 | 22.22% |
| | | >10 hrs | | 7 | 77.78% |
| | automatic changeover | | | 9 | 100.00% |
| | 24-hour CCTV monitoring | | | 7 | 77.78% |
| | Access Control type | card | | 8 | 88.89% |
| | | finger print | | 3 | 33.33% |
| | | iris scan | | 0 | 0% |
| | | others | | 0 | 0% |

| | | | | |
|---|---|---|---|---|
| | Security guards | Compound | 9 | 100.00% |
| | | Building | 5 | 55.56% |
| | CMS (intrusion alert) | | 2 | 22.22% |
| | Heat & smoke detectors | | 9 | 100.00% |
| | Portable fire extinguishers | | 9 | 100.00% |
| | Gas-based fire suppression | | 8 | 88.89% |
| | Remote BOMBA alert | | 0 | 0% |
| | Air Conditioning with redundancy | | 9 | 100.00% |
| | Air Conditioning Temperature 18 - 22 degC | | 9 | 100.00% |
| | Humidity 45% - 50% | | 4 | 44.44% |
| | Staff Facilities - Rest area | | 8 | 88.89% |
| | Staff Facilities - Pantry | | 8 | 88.89% |
| | Staff Facilities - Personal safety | | 9 | 100.00% |

**C. Services offered by IDC**

| | | | | |
|---|---|---|---|---|
| co-location | co-location | | 9 | 100.00% |
| managed services | web hosting | | 8 | 88.89% |
| | ASP | | 5 | 55.56% |
| | Total Solutions | | 8 | 88.89% |
| | Value added - customised | | 8 | 88.89% |

**D. Customer segment market**

| | | | | |
|---|---|---|---|---|
| Brick & Mortar | Government bodies | | | 7% |
| | Education | | | 5% |
| | Banking | | | 4% |
| | SMI | | | 29% |
| | NPO | | | 10% |
| | Tourism | | | 8% |
| | Software House | | | 11% |
| | Hardware House | | | 4% |
| | MNCs | | | 9% |
| | ICT Service Provider | | | 5% |
| dotcoms | e-portal | | | 7% |
| | ASP | | | 13% |

**E. System & Network Infrastructure**

| | | | | |
|---|---|---|---|---|
| Connectivity | multiple carriers - telco | 1 TELCO | 5 | 55.56% |
| | | > 1 TELCO | 4 | 44.44% |
| | multiple carriers - ISP | 1 ISP | 2 | 22.22% |
| | | > 1 ISP | 7 | 77.78% |
| | SLA with telco | SLA | 6 | 66.67% |
| | | UNERSTANDING | 2 | 22.22% |
| | SLA with ISP | SLA | 5 | 55.56% |
| | | UNERSTANDING | 2 | 22.22% |
| | Types of connectivity from telco | Fibre optic | 7 | 77.78% |
| | | ISDN | 7 | 77.78% |
| | | Copper line | 2 | 22.22% |
| | How many internet lines available for clients | <3 LINES | 2 | 22.22% |
| | | UNLIMITED | 7 | 77.78% |
| | Internet connection speed from IDC to Telco | <10Mbps | 4 | 44.44% |
| | | >10Mbps | 5 | 55.56% |
| System & Network security | How often do you monitor / analyse the firewall logs? | Daily & more | 4 | 44.44% |
| | | Weekly | 2 | 22.22% |
| | | Monthly | 1 | 11.11% |
| | | Depends on SLA | 1 | 11.11% |

| | | | | |
|---|---|---|---|---|
| | Do you have an in-house network security team / 3rd party security service? | in house | 7 | 77.78% |
| | | in house and external | 2 | 22.22% |
| | What other than the firewall that your company is able to detect unauthorised access? | IDS | 6 | 66.67% |
| | | IDS and more or others | 2 | 22.22% |
| | How often do you perform the system backup? | Daily & more | 6 | 66.67% |
| | | Weekly & more | 1 | 11.11% |
| | | Monthly & or by demand | 2 | 22.22% |
| | How many people know about the administration password? | 3 or less | 8 | 88.89% |
| | | More than 3 | 1 | 11.11% |
| Commerce security | How do you guard & validate the authorization of data exchanges? | SSL, VPN, MEPS | 3 | 33.33% |
| | | OTHERS | 3 | 33.33% |
| Data security | How often do you perform data backup? | Daily & more | 4 | 44.44% |
| | | Weekly & more | 0 | 0.00% |
| | | Monthly & or by demand | 3 | 33.33% |
| | Do you store at least a copy of latest backup media offsite? | Yes | 8 | 88.89% |
| | How quick is the response in the event of a disaster? | Within 1 hour | 6 | 66.67% |
| | | Within 3 hrs | 3 | 33.33% |
| storage capacity | How do you ensure scalability? | Have bigger IDC space | 1 | 11.11% |
| | | Capacity planning | 4 | 44.44% |
| | | Constant monitoring by system; adopt latest technology | 1 | 11.11% |
| | | Use modular and scalable storage solution. | 1 | 11.11% |
| | | Not sure / No comment | 2 | 22.22% |
| | Do you implement Storage Area Network? | Yes | 3 | 33.33% |
| | | Planning | 2 | 22.22% |
| F. Data Centre Management & Operation | | | | |
| Service Management Centre (Call Centre) | Is the call centre staffed 24/7? | CC & NOC | 6 | 66.67% |
| | | ONLY NOC | 3 | 33.33% |
| | Do you have first level support for all alerts, incidents & problems, first level contacts for customers? | Yes | 9 | 100.00% |
| | How quick is the average response time to a complaint? (minutes) | within 15 minutes | 5 | 55.56% |
| | | within 30 minutes | 2 | 22.22% |
| | | within 60 minutes | 1 | 11.11% |
| | | within 2 hours | 1 | 11.11% |
| Service Monitoring & Maintenance | Do you have dedicated management and monitoring tools for all operational managed services? | Yes | 7 | 77.78% |
| | What is the frequency of reporting to the customers on the system's performance? | daily or by demand | 1 | 11.11% |
| | | weekly or by demand | 0 | 0.00% |
| | | monthly or by demand | 3 | 33.33% |
| | | ad-hoc | 5 | 55.56% |
| | Basic Monitoring | | | |
| | - Packet loss monitoring | Yes | 8 | 88.89% |
| | | By demand | 0 | 0.00% |
| | - view log files | Yes | 8 | 88.89% |
| | | By demand | 0 | 0.00% |
| | - Hard disk usage monitoring | Yes | 5 | 55.56% |

| | | By demand | 2 | 22.22% |
|---|---|---|---|---|
| | - CPU usage monitoring | Yes | 5 | 55.56% |
| | | By demand | 2 | 22.22% |
| | - Memory usage monitoring | Yes | 5 | 55.56% |
| | | By demand | 2 | 22.22% |
| | Proactive monitoring | | | |
| | - trends monitoring | | 9 | 100.00% |
| | - automated responses to given conditions | | 9 | 100.00% |
| | - new patches / service packs firewall monitoring for intrusions | | 8 | 88.89% |
| | How often do you conduct meetings with your customers? | daily or by demand | 0 | 0.00% |
| | | weekly or by demand | 3 | 33.33% |
| | | monthly or by demand | 4 | 44.44% |
| | | ad-hoc | 1 | 11.11% |
| | | other department manage | 1 | 11.11% |
| | What is the ratio of customer/ IDC personnel : target / optimum? | target: 1 to <50 servers | 5 | 55.56% |
| G. Other questions | | | | |
| Reasons customer acquire iDC services | Complexity of IT architecture & software | | 8 | 89% |
| | Better use of space | | 1 | 11% |
| | Let experts do the job | | 4 | 44% |
| | Focus on core competencies | | 6 | 67% |
| | Complexity of IT architecture & software | | 6 | 67% |
| | Business / Operation risk | | 4 | 44% |
| | Specialization | | 2 | 22% |
| | Better e-business performance | | 3 | 33% |
| | More secured infrastructure | | 7 | 78% |
| | Healthier cash flow ( factor of amortization, peak initial capital investment) | | 3 | 33% |
| How much do you think is the total estimated cost savings in value and in percentage by each of your customer after they engage in your service? | <50% operating cost | | 6 | 66.67% |
| | >50% operating cost | | 1 | 11.11% |
| | no comment | | 2 | 22.22% |
| What do you think is the greatest selling point of your IDC? | competitive pricing | | 3 | 33.33% |
| | excellent & flexible services | | 5 | 55.56% |
| | great IT infrastructure | | 1 | 11.11% |
| | value for money | | 3 | 33.33% |

# Appendix E

## Detailed response of iDCs

| | | | iDC #1 | iDC #2 | iDC #3 | iDC #4 | iDC #5 | iDC #6 | iDC #7 | iDC #8 | iDC #9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A. Location and Environment** | | | | | | | | | | | |
| Geographical location | City | | | | | | | | X | | |
| | Suburb | ? | | | | X | X | | | | |
| | MSC | | | | | | | X | | | |
| Environment | Lighting protection | | | X | X | X | X | X | X | X | X |
| | Natural disaster free | | | X | X | X | X | X | X | X | X |
| **B. Infrastructure** | | | | | | | | | | | |
| Building Layout | Floor space (sq ft) | <5000 | 4,200 | | | | | | | | |
| | | 5001-10000 | | | | 2,600 | 1,000 | | | | |
| | | >10000 | | 30,000 | 20,000 | | | 16,000 | 17,500 | 10,000 | 10,000 |
| | Organised racking system: | Open rack — Standard | X | | | | | X | | X | X |
| | | Open rack — By demand | | | | | | | | | |
| | | Locked rack — Standard | X | | X | | | | | X | X |
| | | Locked rack — By demand | | X | | | | | | | |
| | | Private Caging — Standard | X | | | | | | X | X | |
| | | Private Caging — By demand | | | | | | | | | |
| | Structured electrical cabling | Under floor trunking | X | | X | X | X | X | X | X | X |
| | | Overhead Tray | | X | | | | | | | |
| | Raised Floor | | X | concrete | X | X | X | X | X | X | X |
| | Dedicated areas for: | Internet access nodes | X | X | X | X | X | X | X | X | X |
| | | Server racks | X | X | X | X | X | X | X | X | X |
| | | Testing and staging | X | X | X | X | X | X | X | X | X |
| | | Temporary storage | X | X | X | X | | X | X | | X |
| | | Tape room | X | X | X | X | X | X | X | | X |

| Facilities | Network Operating Centre (NOC) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Separate electrical feeder(s) from the utility provider | X | X | X | X | X | X | X | X | X |
| At least 2 means of electrical distribution in the Data Centre | X | X | X | X | X | X | X | X | X |
| Voltage surge suppresser | X | X | X | not sure | not sure | X | X | X | X |
| Harmonics filter(s) | 4X500 | 2X400 | 4X650 | 2X800 | 200 | 2X60 | 3X60 | 2x100 | 1X100 |
| UPS availability | X | X | X | X | X | X | X | X | X |
| UPS standby duration (minutes) — 1-30 min | 30 | 30 | 30 | 30 | 25 | 20 | | 30 | |
| 31-60 min | | | | | | | 45 | | |
| >1 hr | | | | | | | | | 180 |
| UPS blackout alert | X | X | X | X | X | X | X | X | X |
| Genset availability | 2 | 2 | 3 | 2 | 1 | 1 | 3 | 1 | 2 |
| standby duration (hrs) — 1-10 hrs | | | | | | 6 | | | 7 |
| >10 hrs | 24 hrs each | 16 hrs each | 24 hrs for a week | 72 | 24 hrs for a week | | >10 each | 48 | |
| automatic changeover | X | X | X | X | X | X | X | X | X |
| 24-hour CCTV monitoring | X | X | X | X | plan | X | X | X | plan |
| Access Control type — card | X | X | X | X | X | X | X | X | X |
| finger print | | | | | | | | | |
| iris scan | | | | | | | | | |
| others | | | | | | | | | |
| Security guards — Compound | X | X | X | X | X | X | X | X | X |
| Building | X | X | | | | X | X | | |
| CMS (intrusion alert) | | | X | X | X | | | X | X |
| Heat & smoke detectors | X | X | X | X | X | X | X | X | X |
| Portable fire extinguishers | X | X | X | X | X | X | X | X | X |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gas-based fire suppression | FM 200 | FM 200 | x | x | x | FM 200 | x | x | x |
| Remote BOMBA alert | x | x | x | x | x | x | x | x | x |
| Air Conditioning with redundancy | 3 | 3 | 4 | 2 | 3 | PCU 6+6 per floor | 16 | 8 | 3 |
| Air Conditioning Temperature 18 - 22 degC | 19 degC | 19 degC | 21degC | 21degC | 22 degC | 19 degC | 20degC | 21degC | 22 degC |
| Humidity 45% - 50% | not sure | not sure | 45% | 45% | 50% | 50% | not sure | not sure | not sure |
| Staff Facilities - Rest area | x | x | x | x | x | x | x | x | x |
| Staff Facilities - Pantry | x | x | x | x | | | x | x | x |
| Staff Facilities - Personal safety | x | x | x | x | x | x | x | x | x |
| **C. Services offered by IDC** | | | | | | | | | |
| co-location | x | x | x | | x | x | x | x | x |
| managed services / web hosting | x | x | x | x | | x | x | x | x |
| ASP | x | x | x | x | x | | x | x | x |
| Total Solutions | x | | x | x | | x | x | x | x |
| Value added - customised | x | x | x | x | x | x | x | x | x |
| **D. Customer segment market** | | | | | | | | | |
| **Brick & Mortar** | | | | | | | | | |
| Government bodies | 10% | 20% | 5% | 5% | 36% | 3% | 25% | 20% | 0% |
| Education | 5% | 10% | 5% | 5% | | 3% | 3% | 5% | 20% |
| Banking | 5% | 5% | 5% | 5% | 10% | 3% | 3% | 5% | 0% |
| SMI | 5% | 10% | 40% | 40% | 50% | 25% | 40% | 50% | 10% |
| NPO | 5% | 5% | 0% | 0% | 50% | 3% | | 5% | 10% |
| Tourism | 5% | 5% | 10% | 10% | | 3% | | | 40% |
| Software House | 5% | 10% | 15% | 15% | 36% | 10% | 10% | 15% | 0% |
| Hardware House | 5% | 5% | 10% | 10% | | 3% | | | 10% |
| MNCs | 40% | | | | | 30% | | | 0% |
| ICT Service Provider | | 10% | | | | 30% | | | 0% |
| **dotcoms** | | | | | | | | | |
| e-portal | 5% | 10% | 5% | 5% | 2% | 25% | | 5% | 10% |

| E. System & Network Infrastructure | | 10% | 10% | 10% | 50% | 2% | 25% | 0% |
|---|---|---|---|---|---|---|---|---|---|
| **Connectivity** | | | | | | | | | |
| multiple carriers - telco | 1 TELCO | | | | 1 | 1 | 1 | 1 |
| | > 1 TELCO | 2 | 3 | 2 | | | 2 | |
| multiple carriers - ISP | 1 ISP | 3 | 1 | | | | | 1 |
| | > 1 ISP | | | 2 | 2 | 2 | 4 | |
| SLA with telco | SLA | X | X | X | X | | X | |
| | UNDERSTANDING | | | | | X | | X |
| SLA with ISP | SLA | X | | X | | X | X | |
| | UNDERSTANDING | | X | | X | | | X |
| Types of connectivity from telco | Fibre optic | X | X | X | | X | X | X |
| | ISDN | X | X | X | | X | X | X |
| | Copper line | | | | X | X | | |
| How many internet lines available for clients | <3 LINES | X | X | | X | X | | |
| | UNLIMITED | | | X | | | X | X |
| Internet connection speed from IDC to Telco | <10Mbps | | | 8Mbps | 2Mbps | | 4Mbps | |
| | >10Mbps | 45Mbps | 10Mbps | | | 54Mbps | 155Mbps | 54Mbps |
| **System & Network security** | | | | | | | | | |
| How often do you monitor / analyse the firewall logs? | Daily & more | X | X | X | | X | X | |
| | Weekly | | | | X | | | X |
| | Monthly | | | | | | | |
| | Depends on SLA | | | | | | | |
| Do you have an in-house network security team / 3rd party security service? | in house | X | | | X | X | | X |
| | in house and external | | X | X | | | X | |
| What other than the firewall that your company is able to detect unauthorised access? | IDS | X | X | X | | | X | |
| | IDS and more or others | | | | X | X | | X |

| Category | Question | Answer / Option | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | How often do you perform the system backup? | Daily & more | X | X | X | X | X | X | | | X | X | | |
| | | Weekly & more | | | | | | | X | | | | X | X |
| | | Monthly & or by demand | | | | | | | | | | | X | X |
| | How many people know about the administration password? | 3 or less | X | X | X | | X | X | X | | X | X | X | X |
| | | More than 3 | | | | X | | | | | | | | |
| Commerce security | How do you guard & validate the authorization of data exchanges? | SSL, VPN, MEPS | | | | SSL, VPN, encryption | | SSL, VPN | | SSL, VPN | | | | |
| | | OTHERS | PGPG, PKI, SSH Secured Shell | MEPS - 128 bit ISO 8583 banking requirements | Technical partner manage payment gateway | | | | Standard Procedure | | | | | |
| Data security | How often do you perform data backup? | Daily & more | X | | X | X | | X | X | | | X | | X |
| | | Weekly & more | | X | X | | | | | | X | | | |
| | | Monthly & or by demand | | | | | | | | | | | | |
| | Do you store at least a copy of latest backup media offsite? | Yes | X | X | X | X | X | X | X | | X | X | | X |
| | How quick is the response in the event of a disaster? | Within 1 hour | X | X | X | X | X | X | X | | X | X | | X |
| | | Within 3 hrs | | | | | | X | | | | | | X |
| storage capacity | How do you ensure scalability? | Have bigger IDC space | X | X | X | | | | | | | | | |
| | | Capacity planning | X | | | | | | | | | | | |
| | | Constant monitoring by system; adopt latest technology | | | X | | X | | X | | X | | X | |
| | | Use modular and scalable storage solution. | | | | X | | | | | | | | |

| | | Not sure / No comment | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Do you implement Storage Area Network? | Yes | | | | | | | | | | | x | x | | |
| | | Planning | | | | | | | | | | | x | x | | |
| **F. Data Centre Management & Operation** | | | | | | | | | | | | | | | | |
| Service Management Centre (Call Centre) | Is the call centre staffed 24/7? | CC & NOC | x | | x | | x | | | x | | | x | x | x | x |
| | | ONLY NOC | | | | | | | | | | | | | | x |
| | Do you have first level support for all alerts, incidents & problems, first level contacts for customers? | Yes | x | | x | | x | | | x | | | x | x | x | x |
| | | ? | | | | | | | | | | | | | | |
| | How quick is the average response time to a complaint? (minutes) | within 15 minutes | x | | x | | x | | | x | | | x | x | x | x |
| | | within 30 minutes | | | | | x | | | | | | | | | x |
| | | within 60 minutes | x | | | | | | x | | | | | | | |
| | | within 2 hours | | | | | x | | | x | | | x | x | x | x |
| Service Monitoring & Maintenance | Do you have dedicated management and monitoring tools for all operational managed services? | Yes | x | | x | | x | | | x | | x | | | | |
| | What is the frequency of reporting to the customers on the system's performance? | daily or by demand | | | | | | | | | | | | | | |
| | | weekly or by demand | | | | | | | | | | x | | | | |
| | | monthly or by demand | x | | | x | | x | | x | | | x | x | | x |
| | | ad-hoc | | x | | | | | | | | | | | | |
| | Basic Monitoring | | | | | | | | | | | | | | | |
| | - Packet loss monitoring | Yes | x | | x | | x | | | x | | x | x | x | x | x |
| | | By demand | x | | x | | x | | | x | | x | | x | x | x |
| | - view log files | Yes | x | | x | | x | | | x | | | x | x | x | x |
| | | By demand | x | | | | | | | | | | | | x | |
| | - Hard disk usage | Yes | x | | | | x | | | x | | | x | x | x | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| monitoring | By demand | | | | | | | | | | | |
| - CPU usage monitoring | Yes | | | | X | | X | X | | X | X | |
| | By demand | | | | | X | | | X | | | |
| - Memory usage monitoring | Yes | | | X | X | | X | X | | X | X | |
| | By demand | | | | | X | | | X | | | |
| Proactive Monitoring | | | | | | | | | | | | |
| - trends monitoring | | X | X | X | X | X | X | X | X | X | X | X |
| - automated responses to given conditions | | X | X | X | X | X | X | X | X | X | X | X |
| - new patches / service packs firewall monitoring for intrusions | ? | X | X | X | X | X | X | X | X | X | X | X |
| How often do you conduct meetings with your customers? | daily or by demand | | | | | | | | | | | |
| | weekly or by demand | | | | | | | | X | | X | |
| | monthly or by demand | | | X | | X | | X | X | | | X |
| | ad-hoc | X | | X | | | | | | | | |
| | other department manage | | | | | | X | | | | | |
| What is the ratio of customer/ IDC personnel : target / optimum? | target: 1 to <50 servers | X | X | X | X | X | X | X | X | X | X | X |
| G. Other questions | | | | | | | | | | | | |
| Reasons customer acquire iDC services | Complexity of IT architecture & software | X | X | X | X | X | X | X | | X | X | X |
| | Better use of space | | | | | | X | | | | | |
| | Let experts do the job | X | X | X | X | X | X | | | | | |
| | Focus on core competences | X | X | X | X | X | X | X | | X | X | X |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Complexity of IT architecture & software | X | | | X | | | | X | X | X | X |
| Business / Operation risk | | | | X | X | X | | X | | X | |
| Specialization | | X | X | X | | X | X | X | | | |
| Better e-business performance | | X | X | X | X | X | | | X | | |
| More secured infrastructure | X | X | X | X | X | | | X | X | X | X |
| Healthier cash flow ( factor of amortization, peak initial capital investment) | | | | X | X | | | | | X | |
| **How much do you think is the total estimated cost savings in value and in percentage by each of your customer after they engage in your service?** | | | | | | | | | | | |
| <50% operating cost | | 50% | 50% | 50% | 50% | | | 50% | 50% | 60-80% | 50% |
| >50% operating cost | | | | | | 50% | 50% | | | | |
| no comment | X | | | | X | X | | | | | |
| **What do you think is the greatest selling point of your IDC?** | | | | | | | | | | | |
| competitive pricing | | | | X | X | X | | X | X | | |
| excellent & flexible services | | X | | X | | | | X | X | X | X |
| great IT infrastructure | | X | | | | | | | | | |
| value for money | X | X | | | | | | | | | |

## *Appendix F*

## Summary findings for iDC customers

| | | Findings | |
|---|---|---|---|
| | | Freq | % |
| A. IDC customers Business Category | Government bodies | 0 | 0% |
| | Education | 0 | 0% |
| | Banking | 1 | 4% |
| | SMI | 3 | 13% |
| | NPO | 1 | 4% |
| | Tourism | 0 | 0% |
| | Software House | 1 | 4% |
| | Hardware House | 0 | 0% |
| | Retail shops | 0 | 0% |
| | Consultancy | 1 | 4% |
| | Others (Brick & Mortal) | 4 | 17% |
| | e-portal | 7 | 30% |
| | ASP | 3 | 13% |
| | Others (dot com) | 2 | 9% |
| B. Reasons to outsource | Cost reduction - get % & value of savings | 17 | 74% |
| | Better use of space | 9 | 39% |
| | Let experts do the job | 17 | 74% |
| | Focus on core competencies | 20 | 87% |
| | Complexity of IT architecture & software | 10 | 43% |
| | Reduced Business / Operation risk | 15 | 65% |
| | Specialization | 15 | 65% |
| | Better e-business performance | 11 | 48% |
| | More secured infrastructure | 18 | 78% |
| | Healthier cash flow ( factor of amortization, peak initial capital investment) | 8 | 35% |
| C. Services acquired from IDC | Co-location | 13 | 57% |
| | Web hosting | 6 | 26% |
| | ASP | 3 | 13% |
| | Total Solution | 5 | 22% |
| | Dedicated hosting | 1 | 4% |
| D. Most important criteria looked for in IDC: | Availability | RANK 1 | 100% |
| | | RANK 2 | 0% |
| | | RANK 3 | 0% |
| | | RANK 4 | 0% |
| | | RANK 5 | 0% |
| | Security | RANK 1 | 0% |
| | | RANK 2 | 91% |
| | | RANK 3 | 4% |
| | | RANK 4 | 4% |
| | | RANK 5 | 0% |
| | Service Support | RANK 1 | 0.00% |
| | | RANK 2 | 9% |
| | | RANK 3 | 30% |

| | | | | |
|---|---|---|---|---|
| | | RANK 4 | | 52% |
| | | RANK 5 | | 9% |
| | Responsiveness | RANK 1 | | 0% |
| | | RANK 2 | | 0% |
| | | RANK 3 | | 65% |
| | | RANK 4 | | 30% |
| | | RANK 5 | | 4% |
| | Customisability | RANK 1 | | 0% |
| | | RANK 2 | | 0% |
| | | RANK 3 | | 0% |
| | | RANK 4 | | 13% |
| | | RANK 5 | | 87% |
| Satisfaction Level on IDC Services | Availability | Very satisfied | | 17% |
| | | Satisfied | | 61% |
| | | No comment | | 4% |
| | | Not satisfied | | 13% |
| | | Very unsatisfied | | 4% |
| | Security | Very satisfied | | 17% |
| | | Satisfied | | 57% |
| | | No comment | | 13% |
| | | Not satisfied | | 13% |
| | | Very unsatisfied | | 0% |
| | Service support | Very satisfied | | 13% |
| | | Satisfied | | 52% |
| | | No comment | | 22% |
| | | Not satisfied | | 13% |
| | | Very unsatisfied | | 0% |
| | Cost effectiveness | Very satisfied | | 9% |
| | | Satisfied | | 57% |
| | | No comment | | 35% |
| | | Not satisfied | | 0% |
| | | Very unsatisfied | | 0% |
| | Responsiveness | Very satisfied | | 13% |
| | | Satisfied | | 52% |
| | | No comment | | 22% |
| | | Not satisfied | | 13% |
| | | Very unsatisfied | | 0% |
| | Customisability | Very satisfied | | 0% |
| | | Satisfied | | 39% |
| | | No comment | | 57% |
| | | Not satisfied | | 4% |
| | | Very unsatisfied | | 0% |
| | Satisfaction on SLA compliance | Very satisfied | | 0% |
| | | Satisfied | | 30% |
| | | No comment | | 48% |
| | | Not satisfied | | 13% |
| | | Very unsatisfied | | 9% |
| | Meet outsourcing objectives | Very satisfied | | 0% |
| | | Satisfied | | 100% |
| | | No comment | | 0% |
| | | Not satisfied | | 0% |
| | | Very unsatisfied | | 0% |
| E. Future expectations from | Remote administration | | | 22% |

| | | | | |
|---|---|---|---|---|
| IDC: | Stronger technical support / IDC personnel | | | 9% |
| | Bigger bandwidth | | | 17% |
| | More competitive Pricing | | | 4% |
| | Higher availability / uptime | | | 13% |
| | Better customer support and more responsible | | | 22% |
| | No comment / so far so good | | | 39% |
| F. Problems dealing with IDC | Lack of commitment in providing services | | | 4% |
| | Slow response time and lack of customer support | | | 26% |
| | Rely too much on 3rd party vendors - Lack of in house qualified personnel | | | 9% |
| | Slow on-line connections Bandwidth problem | | | 13% |
| | Low security/ firewall | | | 4% |
| | SLA unsatisfaction | | | 4% |
| | Low availability | | | 4% |
| | No comment / so far so good | | | 43% |
| G. Would you recommend others to subscribe to IDC services and why? | Yes, would recommend IDC services | | | 96% |
| | No comment | | | 4% |
| | Cost effectiveness / cost savings with better cash flow bring to higher business efficiency | | | 55% |
| | Good IT infrastructure | | | 23% |
| | IDC Specialisation / expertise | | | 14% |
| | Good and flexible services | | | 18% |
| | Less hassle / problem / risk | | | 23% |
| | Focus on Core competencies hence greater business efficiency | | | 14% |