A SURVEY OF COMPUTER USE AMONG AGENCIES SERVING PERSONS WITH DEVELOPMENTAL DISABILITIES

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ABSTRACT

This national survey of computer use among 270 agencies serving persons with developmental disabilities provides a picture of how and how much agencies are using computers to support operations today. Reported by agency size are the percent of agencies with high and low speed internet access, web sites, and percent of employees with email accounts. Also reported are numbers of computers in used (pentiums and other, networked and not), the number of computerized sites, the percent using different types of application software and services, and the average number of staff devoted to system support.

In this day and age, it is reasonable to assume that most every agency of any size serving persons with developmental disabilities is making some use of computers. The question is how and how much. This is more than a question of general interest. Computer systems represent a major investment for agencies. In the under-funded world of developmental disabilities, agencies can't afford to misuse their limited funds. They must get a good return on investment. Their very survival can depend on it.

While agency administrators appreciate many of the benefits that can come with the use of computers, they know from the experience of other agencies and their own of the attendant challenges and costs. Just how much of an investment in information technology should the agency make and in what?

One of the surest ways to get a sense of what a sensible investment strategy might be for an agency is to consider the nature of the IT investment being made by like agencies today. This is true even though few agencies are ever wholly satisfied with their information systems. Computer systems are invariably works in progress; most of the agencies responding to the survey discussed in this article expect to make major improvements in their systems within the next two years.

The author initiated a survey of computer use among agencies serving persons with developmental disabilities in the United States. The survey was sent to prospective respondents by email in October 2002. Completed surveys were returned by email in October and November, 2002. This article describes the survey and results.

The author assembled 2313 email addresses tied to agencies serving persons with developmental disabilities in the United States. The addresses were compiled from listings of members of state and national associations of developmental disabilities service providers, from listings of attendees at conferences of these associations, and from resource listings prepared by state administrative offices and private advocacy organizations. The emailed survey failed to connect to 417 of the addressees. The listings included multiple addresses within the same organization. In order to catch and eliminate multiple responses from the same organization, the author sorted and then matched the ISP portion of the respondent email addresses. Where the ISP address matched, the author compared survey responses and made follow-up queries by email to confirm that suspected responses were in fact from the same agency. Four duplicative responses were identified, confirmed and dropped. As the number of valid, unduplicated addresses is unknown, the response rate cannot be determined. However, the number of responses is easily large enough for inferential analysis. The responses are analyzed by size (annual revenue) of organization in order to erase any concern with the over or under-representation of agencies in terms of this critical variable. If there is a response bias, it is that inherent with email surveys. Agencies represented include only those having employees with email addresses; agencies without employee email addresses are not represented.

Not all of the agencies listed and responding turned out to be developmental disabilities (DD) service agencies; some were advocacy organizations, some were organizations

with administrative rather than service and support responsibilities, some were predominantly behavioral health and health service agencies. It is believed that most, if not all such agencies were caught and eliminated during the cleaning and analysis of the frequency tabulations.

270 valid responses were received. Where surveys were found to be incomplete or showed an unusual response pattern, the author emailed respondents asking for additional information or clarification.

In addition, a follow-up survey was emailed to the 270 respondents; 211 responses were received. Because the survey was not pre-tested and the author had limited experience with such surveys, the survey had some design flaws. Three were enough to warrant a follow-up survey:

- To differentiate private service agencies, private service agencies with significant administrative responsibilities (e.g. national offices of multi-state agencies, and sub-state providers with systems administrative responsibilities), public providers and public providers with significant system administrative responsibilities (e.g. county or other sub-state entities)

- To ascertain whether the agency was using manufacturing software or time and attendance software. Not listing them along with other common software types in the original survey led to the under-reporting of their use.

- To better differentiate “application services” where computerized services, typically web-based (e.g. payroll, billing), are provided to by an outside contractor, from ongoing technical help provided in support of “application software” by software developers or vendors.

Two other design flaws are worth noting:

- The survey attempted to obtain a count of the number of geographically separate sites an agency occupied but failed to define clearly that sites should include all spaces owned or leased by the agency. Some agencies identified only sites with offices, and thus the number of sites identified by respondents is under-stated.

- The annual revenue category of over $20 million was much too broad. There were a number of agencies that far exceeded this threshold making the average figures in this category difficult to interpret.

Respondents:

Respondents were classified into four annual revenue categories indicative of size for purposes of analysis: “smallest” <$5 million; “smaller” $5-10 million, “larger” $10-20

million, and “largest” >$20 million. Most (86%) of the respondents represent private agencies contracted to provide services and supports to persons with developmental disabilities; of these, half report annual revenue of less than $5 million. Just over two thirds (68.3%) report annual revenue of less than $10 million.

7.8% are public agencies (mostly counties) with both service delivery and system administration responsibilities. Most (63.2%) report annual revenues of over $10 million—half of these, over $20 million. A small percent (3.6) are public agencies providing direct services and supports; an even smaller percent (2.4) are national offices of multi-state providers. These offices characteristically administer some centralized software applications for their many sites.

The number of staff / consultants employed by the agencies varied as a function of annual revenue. 75.2% of those agencies reporting annual revenues under $5 million (“smallest agencies”) reported the number of staff on payroll and under contract at less than 100. 76.6% of those agencies reporting annual revenues between $5 and $10 million (“smaller agencies”) reported the number of staff / consultants at between 101 and 250. 65.5% of those agencies reporting annual revenues between $10 and $20 million (“larger agencies”) reported the number of staff / consultants at between 251 and 500. 69.2% of those agencies reporting annual revenues above $20 million (“largest agencies”)reported the number of staff / consultants of more than 500.

Internet

Over 99% of the agencies have connections to the internet. Most providers regardless of size have high speed (T1, DSL, cable or satellite) internet connections. The percent having high-speed connections was lowest among the the smallest agencies, 63.8%. The percent with high speed connections jumps to over 90% for agencies with over $5 million in annual revenues: 91.5% for agencies with annual revenues between $5-10 million, 96.5% for agencies with annual revenues between $10-20 million, and 100% for agencies with annual revenues above $20 million. Conversely, the percent with only low-speed (phone line) connections is relatively high among the smallest providers, 36.2%. However, the percent drops dramatically for bigger providers: 8.5% for providers with annual revenues between $5-10 million, 5.5% for agencies with annual revenues between $10-20 million, and 0% for those with annual revenues over $20 million. 15% of agencies with annual revenues under $5 million report having both high speed and low speed connections. The percent nearly doubles to just over 29% for agencies with revenues between $5-20 million, and more than doubles to just over 33% for agencies with annual revenues above $20 million.

Just under 40 percent of employees of agencies with annual revenues under $10 million are reported to have agency email accounts. The percent rises to just over 45% for agencies with annual revenue of $10-20 million and to just over 50% for agencies with annual revenues above $20 million. It is important to note that these percents do not include employees having access to personal email accounts. Indeed, a number of agencies offered that employees are encouraged to sign up for free email services (e.g.

hotmail, Yahoo). As one respondent commented, “all who need email connections have them.”

78.3% of the agencies participating in the survey have a web-site. A number of others made note that a web-site was to be erected soon. The percent of the smallest agencies with a web-site was 65.4%. The percent jumped to 89.4% of smaller agencies, 94.5% of larger agencies and 92.3% of the largest agencies.

Support

The average number of in-house support staff increases with agency size and number of software applications. Agencies with annual revenue of less than $5 million report IT FTEs ranging from 0 – 4 with an average of .44 for all of the smallest agencies, 1.03 for those reporting at least a fraction of an IT FTE, agencies with annual revenues of $5-10 million report IT FTEs ranging from 0-4 with an average of 1.04, 1.29 for those reporting at least a fraction of an IT FTE; agencies with annual revenues between $10-20 million report FTEs ranging from 0-8 with an average of 1.51, 1.99 for those reporting at least a fraction of an IT FTE. While agencies with annual revenues over $20 million report FTEs ranging from 1 to 26 with an average of 4.65, 3.8 if the two outlier agencies reporting an exceptionally high number of FTEs are excluded. The safe assumption is that agencies reporting no support staff are receiving the support required through contract. The number of support staff reported for the largest providers is difficult to interpret not knowing just how large the agencies in this category are, and knowing that some provide centralized support for many agencies across a state and even in multiple states. [NOTE: THIS PARA HAS CHANGED SINCE SUBMISSION]

Workstations

All agencies report having personal computers. A smaller number, 6.7%, also report having MACs and an even smaller number, 3.4%, report having other computers (mostly RIS). The percent of the smallest agencies (annual revenues under $5 million) having MACs is only 1.6%. Whereas, the percent among agencies with annual revenues in categories above $5 million ranged from 10 to 13%. The small percent of agencies having other types of workstations, was much higher for those agencies with annual revenues over $20 million; 10.3% of agencies with annual revenues above $20 million reported using other types of workstations compared to 1.8 to 2.3% for agencies in the other three annual revenue categories under $20 million. These are generally less expensive, low-performance, “thin client” computers designed to be used in client / server or web-based systems where the performance load is borne by the servers rather than the PCs.

The percent of personal computers reported to be networked with other computers for the purpose of sharing programs, files and internet connections increased with agency size. 63.5% of the PCs in agencies with annual revenues under $5 million are reportedly networked, 74.6% of the PCs in agencies with annual revenues between $5-10 million, 79.9% of the PCs in agencies with annual revenues between $10-20 million,

and 81.8% of the PCs in agencies with annual revenues above $20 million. The percent of PCs reported to be Pentiums was 85.8% for all agencies. By the comments, most of the agencies having computers built on non-pentium microprocessors are planning to replace them with Pentiums. However, as indicated above, some knowingly purchase computers with less expensive, lower-speed micro-processors for use in "thin client" computers.

The number of agency PCs does increase with the size of the agency. 67.2% of the smallest agencies report having fewer than 25 PCs, 92.2% report having fewer than 50 PCs. Only 14.9% of the smaller agencies report having fewer than 25 PCs, 46.8% report having 26-50 PCs, 31.9% report having 51-100. All of the larger agencies report having at least 25 PCs, 16.7% report having 26-50, 42.6% report having 51-100, 27.8% report having 101-200 and 13% report having over 200. All but 7.7% of the largest agencies report having at least 100 PCs, none report having less than 25. 38.5% report having 101-200; more than half, 53.8%, report having over 200.

The average number of sites reported increases with the size (annual revenue) of the agencies. The average number of sites for the smallest agencies is 5.4, smaller agencies 12.6, larger agencies 25.3 and largest agencies, 60.2. The percent of sites having computers is high for all of the size (annual revenue) categories ranging from 86.1% to 90.9%. A number of agencies commented that the number of sites reported didn't reflect the supports provided at many in-home and at-work sites neither owned nor leased by the agency.

Application Software

Over 99 percent of agencies report having word processing software, nearly 97.9% report having spreadsheet software. 92.2% report having database software with the percent increasing with the agency size—from 85% for the smallest agencies to 100% for the larger and largest agencies.

Similarly, 92.9% of the agencies report using accounting software with the percent increasing with agency size—from 86.6% for the smallest agencies to 100% for the larger and largest agencies. A few agencies still did most of their accounting using spreadsheet software. About 19% of the smaller and smallest agencies report using related contract accounting services, while the percent of larger and largest agencies using accounting services drops to 14.5% and 10.3% respectively.

Payroll software is also used by a high percent of agencies, 78.4%, with the percentage increasing with agency size—from 72.4% for the smallest agencies, to 78.7% for smaller agencies, to 80% for larger agencies, and 94.9% for the largest agencies. The percent using related contract payroll services, 40.7% is much higher than the percent using contract accounting services, 16.8%, and the percent doesn't appear to vary as a function of agency size.

Billing software is also used by a high percent of agencies, 76.9%--with the percent increasing by agency size: 67.7% for the smallest agencies, 76.6% for smaller agencies, 87.3% for larger agencies, and 92.3% for the largest agencies. The percent using contract billing services, related or unrelated to the software, was the same as the percent using accounting services, 16.8%. As in the case of accounting services, the percent of agencies using billing services doesn't appear to vary as a function of agency size.

Human Resources software designed to manage employee information is also used by a half (50.4%) of the agencies reporting with the percentage increasing with agency size—from 25.2% for the smallest agencies, to 57.4% for smaller agencies, to 72.7% for larger agencies, and 92.3% for the largest agencies. The percent using related human resources services, 4.9%, is quite small. Time and attendance software, which may or may not be a part of the Human Resources software, is used by 34.6% of the agencies participating in the survey with the percent increasing with agency size-- from 20.6% for the smallest agencies, to 36.8% for smaller agencies, to 43.5% for larger agencies, and 59.4% for the largest agencies.

Case management software designed to manage client information is used by 45.1% of the agencies with the percent increasing with agency size-- from 30.7% for the smallest agencies, to 48.9% for smaller agencies, to 45.5% for larger agencies, and 87.2% for the largest agencies.

31% of the agencies report using fund raising software. 17.3% of the smallest agencies and 36.2% of the smaller agencies report using fund raising software; 47.3% of the larger agencies and 46.2% of the largest agencies report using it.

Manufacturing software is used by agencies operating some form of manufacturing enterprise in which clients are employed. 14.7% of the agencies report using this form of software.

Agencies reported a variety of other types of application software in use including presentation software (e.g. Microsoft Powerpoint), email software, desktop publishing software, statistical packages (e.g. SPSS), telephony programs designed for the computer input of time and related encounter information by telephone, client trust fund administration, mailing list management, purchasing, facility and fleet maintenance, package tracking, photo-editing, nursing, HUD certifications.

Only 4.9% of the agencies report using application service providers (ASPs) for human resources, 5.2% for case management services and 2.6% for fund raising services. This relates in part to the limited offerings available in these areas and to the current value of these offerings. It is clear that these services have a long way to go to match the value agencies feel they receive from the payroll services, and to a lesser extent, billing services.

There is no telling how many of these applications have been developed in-house using database and spreadsheet programs, e.g. Microsoft Access, Visualbasic, FilePro, and other database software. Hopefully the results of the survey as reported in this article will provide agency administrators with a better understanding of where their agencies sit along the computerization continuum and so ground and improve their IT investment decisions. However, the picture provided isn't nearly as detailed and informative as it could be.

A significant number of respondents made clear that they would like to have more detailed information for benchmarking purposes, and to that end would be interested in participating in a more detailed survey. More than the types of application software / services used, they would like to know the names of the application software used and feedback on it's functionality, performance and cost. More than the numbers of computers, they would like to know about agency use of hardware, peripherals (e.g. personal digital assistants (PDAs), and infrastructure (networks). More than the number of Information Technology (IT) full-time equivalents (FTEs), they would like to know the level and types of contract support being used, the performance and cost thereof. They would also like to have more definitive information on the nature of agency operations.

In response to this feedback, a more expansive survey and analysis is planned later this year. It will be addressed to many more agencies. Agencies participating will have access to the results. If your agency would like to participate, email the author.