E D M O N T O N P U B L I C S C H O O L S

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TO: Board of Trustees

FROM: E. Dosdall, Superintendent of Schools

SUBJECT: Total Cost of Ownership

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INFORMATION

The purpose of this presentation it to inform trustees of a project that the administration is undertaking under a contract with Alberta Learning to explore the total cost of ownership of technology (TCO). Microsoft Corporation, in one of its recent publications, referred to the TCO concept and stated that it "has its origins in the green-eyeshade world of accounting - akin to return on investment, revenue streams and profits. It aims to measure all the expenses associated with technology beyond its initial budgeted and direct costs of hardware and software to cover areas that are indirect and often unbudgeted – including training, support and more." The project is provincial in scope and will include the study of at least 12 schools from six jurisdictions. The three Edmonton Public schools that will participate in the case studies are: James Gibbons Elementary, Mary Butterworth Junior High and Ross Sheppard Senior High. The following six cost categories, adopted for this study, are based upon similar work undertaken by Gardner Group, Microsoft, and the Consortium for School Networking (CoSN):

1. Hardware

   Hardware refers to the computer equipment and peripheral devices used by students and staff. For example, hardware includes CPUs, disk drives, monitors, keyboards, printers, projectors, circuit boards, and chips.

2. Resources

   Resources are the software, applications, Internet services, and consumable supplies used by students and staff.

3. Infrastructure

   Infrastructure includes all components that are provided in the school building to make it possible to add computer workstations to the network, which consists of the school's local area network, the jurisdiction's wide area network, and the Internet.

4. Technology Support

   Technology support is the service provided by school staff, district staff, vendors, or third party contractors to keep the hardware, software, and infrastructure functioning effectively and efficiently. Technology support includes formal technology support only, rather than informal support such as staff helping each other to solve problems.

5. Professional Development

   Professional development (PD) refers to activities such as training workshops that are used to assist staff in using technology effectively and efficiently. PD includes formal activities only, rather than informal activities such as staff helping each other to learn new things.

6. Management and Planning

   Management and planning includes budget planning for technology as well as the management of technology infrastructure, hardware, and resources.

There are many aspects of calculating the cost of technology that pose a challenge. One of the challenges is that costs from year to year vary significantly even though education funding is generally the same every year. The costs are typically highest in the first year when new hardware, software and infrastructure components are purchased and when initial training occurs. In the next two to three years, costs level out and are made up of ongoing costs such as upgrades, repairs, salaries, annual licenses, and monthly charges for electrical power and Internet services. In later years, the costs begin to increase again as repairs and upgrades are made to maintain aging hardware. This cycle is referred to as the evergreen cycle. It is a challenge to determine how much money should be set aside for it. Some components, such as hardware, are being replaced every three to five years, while network wiring and furniture, last even longer and are included only once in the 15 year cycle.

The second challenge in determining the total cost of technology is related to the different ways that funding occurs within school jurisdictions. To a greater or lesser extent, all jurisdictions make some decisions about technology centrally and leave other decisions to the schools. In addition to government funding, many schools engage in fund raising activities that increase their ability to pay for technology. Regardless of how much funding is allocated to the schools or where the money comes from, it is essential that all of the costs be identified in order to paint an accurate picture of the total cost of technology. Therefore, the data collection instrument being developed in this study will include components called ‘shared district costs’ to capture this information.

The third and most difficult challenge is determining the hidden or indirect costs of technology. Direct costs are typically budgeted and measured in concrete terms such as capital costs, salaries, fees, and time. Indirect costs are typically unbudgeted, casual in nature and difficult to measure. Indirect costs include downtime or lost productivity and the time users spend troubleshooting, learning new things, and helping others. Direct costs are measured in the data collection instrument; indirect costs are not.

It is expected that the findings would be beneficial at the provincial level in determining the true costs associated with the computer technology as well as at the school level in the developing of the technology plan. There are many questions being asked about computer technology funding in schools. The findings could assist in addressing such questions as: (a) How many dollars should be allocated to technology? (b) Are there things that can be done to decrease the costs? Can we make better use of the funding that we have? Many school administrators are asking these questions as the costs of technology escalate in their schools.

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