Total Cost of Ownership

An Important Piece of Any Sustainability Plan

As with any development of education data systems, it is important to know and articulate what is needed for the ongoing support and maintenance of the data system, and to have the capacity to make needed modifications and enhancements to ensure its long-term usefulness and relevance. To do this, a total cost of ownership (TCO) must be defined. TCO is an estimate of the total direct and indirect costs of a product or process. Specifically, in regard to statewide longitudinal data systems (SLDSs), TCO can be used to guide decisions regarding IT investments, projects, operations, performance, and funding. TCO and other metrics like Return on Investment (ROI, a measure of the value that a project yields to its stakeholders) are useful tools for showing the true value of the SLDS to stakeholders, and are thus an important piece of any sustainability plan. States need to consider not only how to quantify TCO, but also how to use this information to market the SLDS as a whole.

Quantifying Total Cost of Ownership

In defining what is encompassed in the TCO, states need to determine whether to include information technology (IT) costs, program area costs, and/or district costs. Decide if the TCO will focus only on the SLDS, or if it will also include the source systems as part of the scope. If there is a need to compare and contrast the SLDS costs with peer organizations, the state must determine how to do an apples-to-apples comparison. This comparison can help quantify and justify the expenses needed to support the SLDS.

Total Cost of Ownership is an estimate of the total direct (e.g., support and maintenance) and indirect (e.g., administrative) costs of a product or process.

As TCO is being defined, break out its various components, such as:

- *Human resources/staff.* Human capital is often the biggest cost involved in an SLDS. It can also be one of the most challenging to determine. If there is a high percentage of contractors involved, contractor hours will need to be converted to FTE hours. When the project shifts from development/implementation to ongoing support/maintenance, determinations of continued staff support will need to be made. Training and professional development activities (including travel, annual membership fees, etc.) are other facets to consider in this category.
- *Support and maintenance.* Just because a system has been built does not mean that the cost ends there. Ideally, TCO will be considered in any development plan (for instance, in Maine it is a common practice to budget 15–20 percent of overall development costs for annual support and maintenance), although a state may choose whether or not to include development costs in its TCO calculations. When calculating TCO, all ongoing costs must be accounted for, including
  - licensing costs (consider negotiating perpetual licensing vs. annual licensing to reduce ongoing costs);
  - ongoing vendor support;
  - hosting costs;

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For more information on the IES SLDS Grant Program, additional SLDS publications, or for support with system development or use, please visit http://nces.ed.gov/programs/SLDS.

- equipment; and
- training costs (both end user and SLDS staff).

Another strategy in defining TCO is to include a requirement in requests for proposals (RFPs) for prospective vendors to incorporate maintenance and support costs into their responses (in Maine, for example, vendors are required to submit five-year maintenance costs).

- *Ongoing enhancements.* To remain relevant and useful, an SLDS must be constantly evolving to respond to changing needs. Budgeting for ongoing enhancements may be influenced by the source of the initial development. Systems licensed from third-party developers or commercial off-the-shelf applications may include the cost of modifications needed to meet changing federal reporting requirements in the support and maintenance contracts. Modifications of in-house developed systems are the responsibility of the state education agency (SEA) and need to be budgeted separately.

Of course, state agencies across the country are positioned differently, and the organizational structure will influence who owns and controls the budget, as well as the resources. Understanding a state's structure is vital to accurately capturing TCO**.** Examples of state structures include the following:

- The SEA fully supports and maintains the SLDS (project management staff, IT staff, and hardware reside at the SEA).
- The SEA supports the SLDS, the State Technology Office (STO) hosts the SLDS (project management and IT staff reside at the SEA; hardware resides at the STO).
- The SEA supports project management, the STO resources and hosts the SLDS (SLDS project staff resides at the SEA; IT staff and hardware reside at the STO).

TCO: Sustainability Measures in Actual Numbers

Vermont
Vermont received its first SLDS grant in 2012. Vermont's goal for the grant is to replace homegrown data collection applications with Vermont Automated Data Reporting (VADR). Because Vermont had the benefit of looking at what other states had done, the state knew to build sustainability into the grant proposal. These sustainability measures included perpetual licenses, reusable training materials to help with staff turnover, leveraging Ed-Fi as a no-cost licensing solution, and reallocating existing data warehouse annual licensing costs and central IT data center costs. The state CIO and Enterprise Project Management Office have ultimate approval and oversight of any project over $100,000, and wanted to see these savings/sustainability measures represented in actual numbers. The state submitted a business case and five-year cost model, which includes implementation and ongoing costs. Vermont estimated current SEA and LEA costs (data collections, infrastructure, EdFacts reporting, etc.) and future costs/savings (data collection time savings, etc.). Additionally, to give a sense of the value added and savings provided by the new SLDS, Vermont plans to track time savings at both the SEA and LEA levels on an ongoing basis.

Using TCO To Market The SLDS

Once a decision is made as to what will be included in the cost of the system, then it is time to start the solicitation process for long-term support. To begin, know your audience. TCO will need to be communicated to various audiences: agency leadership, legislative staff, legislative budgeting committees, etc. Tailor how TCO is articulated based on the recipient. If too much technical jargon is used, the audience may not understand why support for the SLDS is important—which can be fatal to funding requests. In some cases, when making a case for increased funding, a high-level "best guess" for TCO will suffice in place of exact numbers. There is obvious risk with this option, but it is better than having no support or funding for the SLDS.

The qualitative pieces of TCO (anecdotes about time and money savings, etc.) are equally important to legislators as quantitative pieces. Other ways to promote the SLDS include depicting early wins (the implementation of a small outcome or objective that can be realized quickly and early in a project's timeframe), describing in detail any incremental progress or use of the SLDS, and—if appropriate—making sure all products produced by the SLDS include a reference or branding to

ensure that the recipients know where the data originated. Another strategy for soliciting funding and support for the SLDS and justifying the TCO is to identify champions who are the benefactors of the SLDS and incorporate them in the fight to ensure the SLDS receives funding. Strategic partnering not only helps to define what is included in the TCO and what support is required, but can also add credibility to the TCO process and what is being requested. Some strategic partners could include the state CIO, vendor relations, and Education Service Districts or other intermediaries between the SEA and local education agencies (LEAs). It is important to include these partners early on in the process in order to appropriately represent what resources are needed.

One suggested strategy is to ask for incremental support and funding, as this may be an easier pill to swallow for legislators and others holding the purse strings. This would mean breaking out the TCO in a logical fashion over time (e.g., address hardware needs during one legislative session, and human capital needs at another) so that as pieces are needed, funding would be available.

TCO: Making the Case for Additional Funding

Washington
Washington needed to secure additional funding for ongoing maintenance/operations of the data systems funded by federal money from a grant that expires in May 2014. The state partnered with Gartner, Inc. to perform a TCO study focused on the Office of Superintendent of Public Instruction's (OSPI's) new education data systems, to include IT and program area costs. The objective was to put together a 2013–2015 Data Systems Budget Decision package to bring before the Washington State Legislature by September 2012.

The ultimate benefit of the TCO study was that the OSPI had hard numbers about the SLDS that Gartner could back up, which added credibility. Most notably, the Gartner study found that OSPI's spending for FY12 for K12 education data systems was low (in the 25th percentile) compared to peers with similar data environments. Other lessons learned from the TCO study include the following:

1. Organize the data collection efforts.
2. Get executive support to raise awareness and increase cooperation from other divisions.
3. Don't get bogged down on getting exact numbers.
4. Understand the methodology.
5. Be proactive with the internal and external funding decisionmakers.

The full report, "Gartner's analysis of Washington State's K-12 Education Data System," is available in the "Sustainability" category of the Public Domain Clearinghouse at *https://grads360.org*.

Additional Resources

Early Wins: SLDS Best Practices Brief
http://nces.ed.gov/programs/slds/pdf/early_wins.pdf

Elevator Speeches: SLDS Best Practices Brief
http://nces.ed.gov/programs/slds/pdf/Brief6_Elevator_Speeches.pdf

SLDS Sustainability Guide
http://nces.ed.gov/programs/slds/pdf/sustainability_guide.pdf

SLDS Sustainability Toolkit
http://nces.ed.gov/programs/slds/pdf/sustainability_toolkit.pdf

Stakeholder Engagement & Sustainability: Helping Stakeholders Get the Most from an SLDS
http://nces.ed.gov/programs/slds/pdf/Stakeholderengagement_Sustainability.pdf

Total Cost of Ownership Studies (webinar)
http://nces.ed.gov/programs/slds/webinars.asp#MW_Sept_2013_02