



CYSO Data System Recommendation Report

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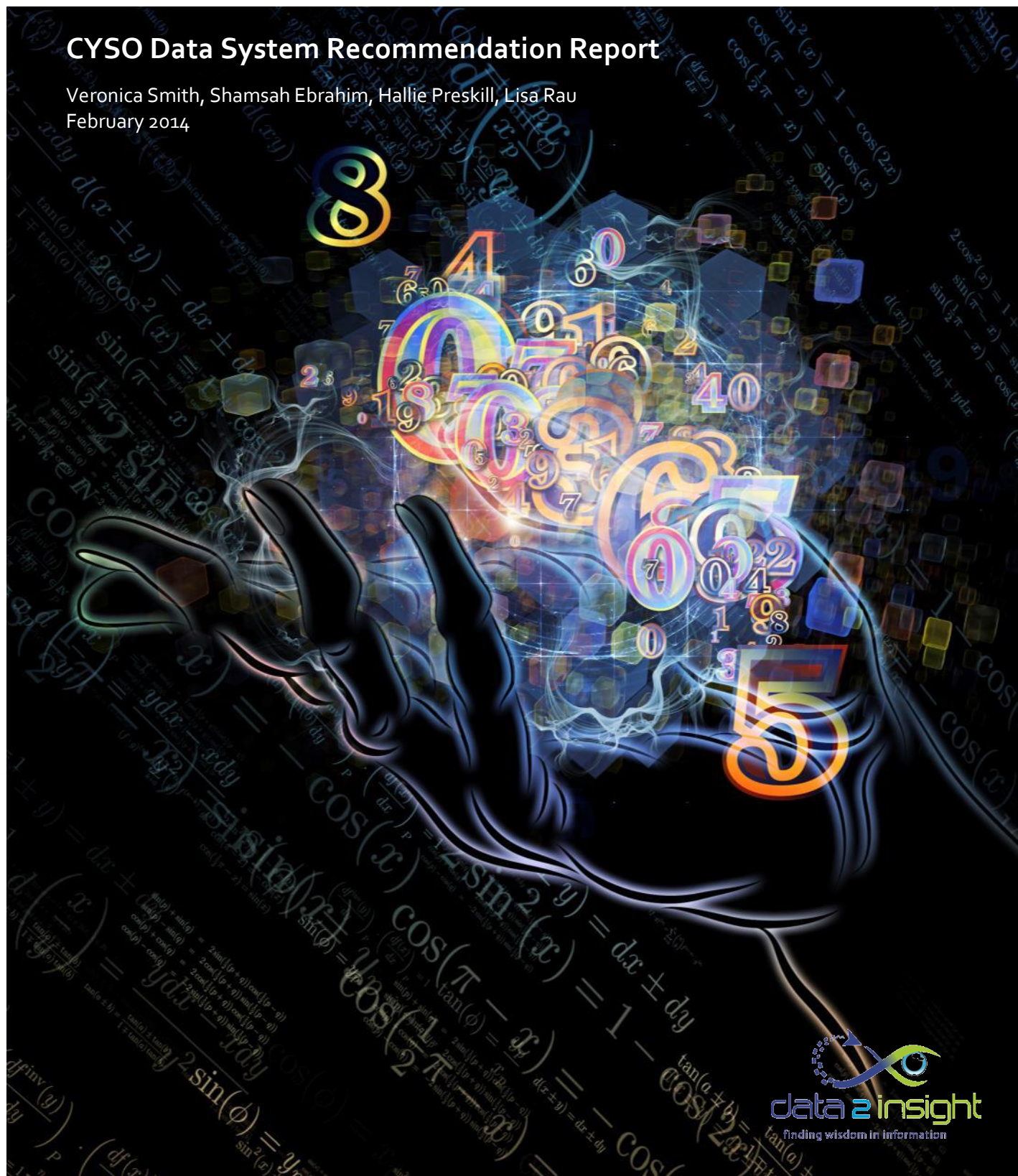


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Executive summary

The primary purpose of this report is to provide CYSO's advisory committee with information that will enable them to make a decision on how, or if, to move forward with a data system.

Data2insight LLC partnered with CYSO staff and board and Elite Services and Support from October 2013 through January 2014 to:

- Identify CYSO member data systems needs and technology capacity as well as CYSO's organizational readiness for shared measurement;
- Conduct research on best practices in shared measurement initiatives and existing data systems that the CYSO system would need to interface with to inform CYSO's shared measurement efforts; and
- Make a recommendation for a data system that would power a shared measurement initiative.

The highest priority shared measurement functions identified by CYSO members were:

- Track youth participation across different/multiple organizations;
- Group students, guardians, and/or parents together as "households;"
- Provide data import/export via Microsoft Excel;
- Support longitudinal tracking of program participants over multiple years; and
- Administer assessments.

Based on the findings from the needs assessment, market research/literature review and the Board's organizational readiness assessment we recommend the following:

Shared measurement initiative implementation

Thoughtful and deliberate planning is essential for ensuring the successful design, deployment, and use of a data system and the resulting data. This means that there needs to be dedicated staff, as well as sufficient resources and time allocated to engaging and building the buy-in of participants, creating data sharing agreements, clarifying norms and expectations, building the system's technical specifications, and creating opportunities for sharing learning from the data.

To this end, we also recommend an **implementation plan** based on best practices by organizations like Arizona Community Foundation, Magnolia Community Initiative, and Nashville After-school Zone Alliance that have led successful shared measurement initiatives (see market research/literature review report for more info).

Critical **next steps** consist of:

- CYSO's **board leadership develops an action plan** (see Appendix B) to put in place clear goals for a shared measurement initiative. It will be critical for the Board to understand the role, purpose, and uses of the data system, so that they can provide the necessary support for its design, development, and deployment.
- CYSO staff and board leadership **develop a shared measurement initiative road map** (see page 32).

Upon completion of these steps, we recommend the following implementation plan, which includes five phases that could be completed in approximately 2 years' time. The sixth scale up phase would

entail refining the pilot model based on evaluation findings and re-launching with a new cohort of member organizations.

- **Phase 1:** Stakeholder engagement
- **Phase 2:** Cohort selection
- **Phase 3:** Shared measurement selection, design and definition
- **Phase 4:** Data system procurement and development
- **Phase 5:** Shared measurement pilot
- **Phase 6:** Scale up

The **implementation costs** associated with a successful shared measurement initiative implementation over and above data system costs will be in the range of **\$510,000 to \$710,000**.

Data system

A **commercial software package** to be selected from one of these vendors:

- EZReports by ThomasKelly, www.ezreports.org/
- CitySpan Technologies' Internet-based data tracking system, youthservices.net
- Social Solutions' Efforts to Outcomes (ETO), www.socialsolutions.com/
- Comet Informatics, www.comet4children.com/
- Cayen Systems, www.cayen.net/
- CiviCore, www.civicore.com/
- nFocus Solutions, www.nfocus.com/

A **three-step procurement process** (see page 26) consisting of focused demonstrations and presentations by the best commercial software candidates. This process will help to make concrete the range of capabilities present in state-of-the-art technology.

- **Step 1:** Finalize procurement documents
- **Step 2:** Invite four to six of recommended vendors using modified RFI document (see Appendix A) to provide demonstration of capabilities
- **Step 3:** Provide two to three selected vendors with detailed request for pricing and implementation plan

The **cost estimate for the recommended data system design, development, and deployment can be expected to between \$125,000 and \$175,000** (if procured in 2014). It is reasonable to expect that the initial data system design, development, and deployment process would take 12 months from system design start to "go live" with the recommended pilot phase.

Other costs associated with the data system are estimated to total approximately \$415,000. These costs include training (\$15,000 per year) and staffing (up to \$300,000 per year). In terms of licensing fees, there is significant variability that will impact potential licensing costs, but a \$100,000 one-time expense is the right order of magnitude for this project.

Risks and opportunities

The **biggest risk** to this project is in **selecting a data system BEFORE the organizational and functional requirements have been identified and planned for.**

The **opportunity at hand lies in a confluence of factors listed below** that CYSO can leverage to can provide the scaffolding needed for a successful shared measurement initiative.

- Partnership with Community Center for Education Results (CCER) to measure a more holistic set of youth outcomes;
- Recent approval, by County Council, of a countywide task force to propose a comprehensive plan for children and youth;
- Race to the Top grant focused on improving academic achievement for youth in South County and support of P2 development;
- Governor Jay Inslee's support for expanding extra-curricular and after-school programs for youth; and
- New Seattle Mayor Ed Murray offers an opportunity to engage in conversation about findings from the Wallace Foundation work about the importance of mayoral support for shared measurement initiatives like the one CYSO is considering.

The combination of the above factors provides fertile ground for the emergence of a shared measurement initiative led by CYSO.

Why CYSO? Because CCER and Puget Sound Education Services District (PSESD) recognize CYSO as a representative of community-based organizations serving students in the Road Map Project region, and an advocate for providing quality expanded learning opportunities to children and youth that will help them thrive in school and in life. Furthermore, one of CYSO's key goals is to identify outcomes and indicators that youth development providers agree to mutually track, and to explore measurement technologies to collect data on these outcomes and indicators at the organizational and aggregate levels.

Why now? Because County is moving forward with a comprehensive plan for children and youth and the PSESD P2 system design and development is underway. There is a recognized need in County for a clear road map for shared measurement of youth well-being that will provide the information needed to improve program quality and outcomes at the county level. This information does not exist now and is critical for informing education efforts in the region and state. By moving forward now with a shared measurement initiative, CYSO can be a strategic partner in these efforts to ensure that the needs of youth, from a whole child perspective, are met.

Introduction

Report purpose

The primary purpose of this report is to provide CYSO's advisory committee with information that will enable them to make a decision on how, or if, to move forward with a shared measurement data system.

To this end, data2insight partnered with CYSO and Elite Services and Support (ESS) to answer the following questions:

- What could a system look like (i.e., what are the options)?
- What are the cost dynamics of system options?
- What kinds of system flexibility/functionality do we want/need over time?
- What are necessary levels of investment (people and costs) for different options? Who should pay?
- Can we link to other data (education, justice, etc.)? What is involved?
- How does external reporting work (cost/procedure to customize to funder requirements)?
- Can we build out to incorporate additional outcomes over time?
- How would CYSO roll out a successful shared measurement initiative?
- What are the critical next steps for such an initiative, given CYSO's level of readiness?
- What are the keys to successful stakeholder outreach?
- What are the strengths and opportunities that CYSO can build on as it moves forward?

Report limitations

The data system and shared measurement initiative recommendations included in this report are based on a set of data consisting of:

1. Member needs assessment provided by ESS;
2. Conversations from October 1, 2013 through January 15, 2014 with CYSO staff, advisory committee, Ken Thompson from the Bill and Melinda Gates Foundation, and CYSO board; and
3. Market research and literature review conducted by data2insight from October through December 2013.

Furthermore, we observed during our engagement with CYSO that the nature of shared measurement efforts within the organization and in County and Washington State are emergent and rapidly changing. For example, the ESS member needs assessment developed potential system functions from a subset of CYSO members. However, there is still the need to create a more detailed set of functional requirements necessary for a complete data system specification.

This set of recommendations, therefore, is based on the landscape in which the CYSO shared measurement system is being conceived. These recommendations take into account the flexibility that will need to be maintained as CYSO strives to build a data system that will interface seamlessly with other emerging systems; they will likely not address every aspect of CYSO's shared measurement efforts as they take shape in the coming months.

Work performed

Data2insight mapped the existing and emerging data systems in County and Washington State that will likely impact the development of the CYSO data system. We also partnered with CYSO to identify the critical metrics for inclusion in the data system design. We conducted market research and drew from literature to identify similar shared measurement projects and collective impact efforts. We also summarized lessons learned; highlighting the potential benefits of shared measurement systems. The results of this work were presented to CYSO in a market research/literature review report in December 2013.

We used the CYSO member needs assessment provided by ESS and CYSO's own data dictionary to define the critical data system requirements. These informed our recommendations for the data system architecture and vendors and the procurement process. Based on our conversations with CYSO staff and the advisory committee, as well as our market research and literature review, we developed a recommended implementation plan for a shared measurement initiative that includes the design, development, and deployment of a data system to support shared measurement.

Contributors to this report

This report draws from the insights and expertise of a range of CYSO members and partners. Notably, the research process was guided by a subcommittee of CYSO's advisory board that met monthly to provide guidance to the process. Members of this data advisory committee were:

- **Richard Brooks**, Renton Area Youth Services
- **Erin Lawrence Cook**, City Year
- **Melinda Giovengo**, YouthCare
- **Amy Mack**, Big Brothers and Big Sisters of Puget Sound
- **Ashley Miller**, The Service Board
- **Meg Pitman**, Boys' and Girls' Clubs of County
- **Jennifer Ramirez Robson**, Southwest Youth and Family Services
- **Catherine Verrenti**, Neighborhood House

1. CYSO shared measurement vision, goals, and objectives

The advisory committee completed a cursory review of the following exemplars. They indicated that the **CYSO system version 1.0 will be a shared measurement platform with aspirations for an adaptive learning system** (see Appendix C).

There are three different types of shared measurement systems:

Shared Measurement Platform

EXEMPLAR: <http://www.successmeasures.org/data-system>

- Chooses from a set of a measures within their fields
- Uses web-based tools to inexpensively collect, analyze, and report on performance or outcomes
- Lowers cost and increases efficiency in annual data collection
- Provides expert guidance for less sophisticated organizations
- Improves credibility and consistency in reporting

Comparative Performance System

EXEMPLAR: <http://www.arizonanonprofits.org/content/project-sam>

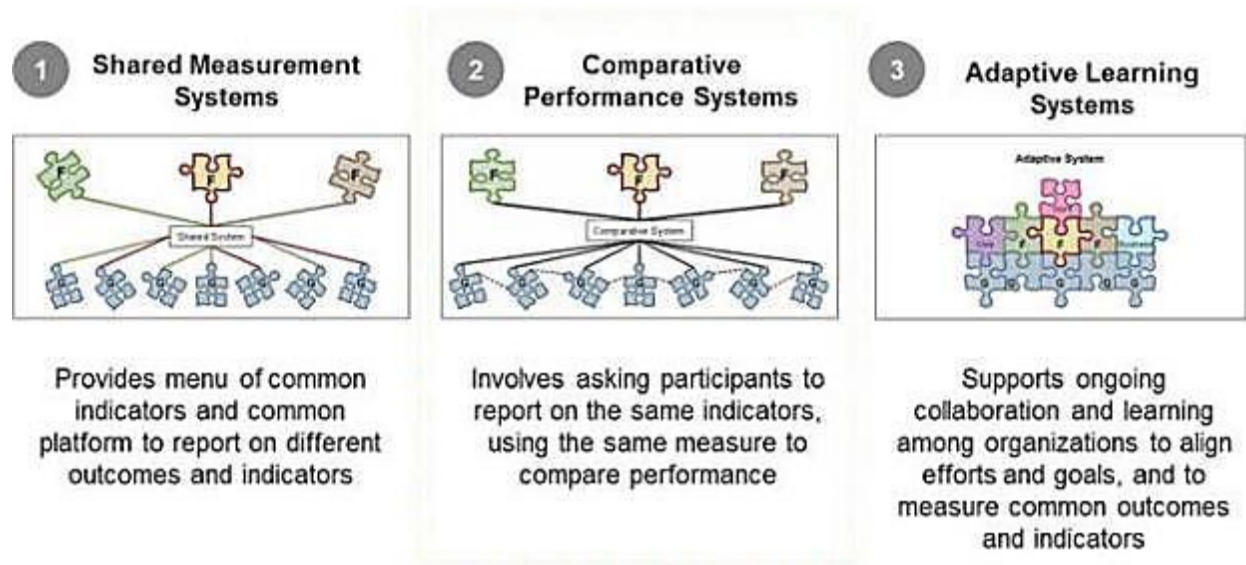
- Participants are all required to report on the same measures, using identical definitions
- Users can compare performance of different organizations and collect reliable field-wide data
- Grantees can learn from each other
- Funders can make more informed choices
- Field can accurately document its scale and influence

Adaptive Learning System

EXEMPLAR: <http://allhandsraised.org/>

- Ongoing, facilitated process of engagement to address a single complex issue/problem
- Establishes comparative performance measures
- Coordinates participating organizations' efforts
- Facilitates collaborative learning and problem solving
- Improved alignment of goals across participating organizations
- Formation of learning community
- Increased effectiveness across organizations at solving problem

Figure 1: Different types of shared measurement systems¹



¹ *Breakthroughs in Shared Measurement and Social Impact*. FSG Social Impact Advisors, 2009.

2. CYSO needs assessment overview

Member needs

Different needs for small and large community based organizations (CBOs)

The CYSO shared measurement initiative intends to meet the needs of CBOs both large and small. It is expected that each member organization will fall into one of two categories from a needs perspective:

Small CBOs: These organizations do not necessarily have any sophisticated (beyond Excel spreadsheets) data tracking systems in place. The data input requirements and mechanisms for the CYSO system need to be easy for staff to use. These small CBOs should have the ability to add in their own data elements specific to their organizations and only visible/usable to them; and use the CYSO data system as their primary data management tool. This would present significant benefits to these organizations, helping them to improve their operations and (better) evaluate the quality of their programs.

Larger CBOs: Any organization that has made a significant investment in their own data system is less likely to want to use the shared measurement initiative data system. For these organizations, the primary member need is to ensure that there is not a significant burden to submit data to the CYSO data system. Our recommended architecture will necessitate the development of interfaces between each larger CBO's existing data system and the shared CYSO data system. For any data elements that need to be collected by the shared measurement system that are not included in the CBOs existing data system, there are three options:

1. A simple plan would assume that the same input mechanism as is used for surveys to evaluate programs could be supplemented to collect those outside-of-the-existing CBO data elements.
2. The existing CBO system could be extended to collect the CYSO-specific data elements.
3. An additional method of data transfer (a web service) could be put in place between the shared measurement system and these additional data elements – note: this would require an additional data repository for those elements.

The choice between these options will require input from each particular CBO and will also depend on the selected data system for CYSO.

System capabilities

The five most desired functions, from the ESS survey of members (*Exploring Current Practices and Future Needs* December 2013 report), and the implications for data system design are outlined below.

1. Track youth participation across different/multiple organizations

In order to track youth participation across different/multiple organizations, the new data system needs:

- A common participant identifier: We assume this participant identifier will need to be anonymized and coordinated with the identifiers planned for the P2 system.
- Each organization to systematically record youth participation – either in their own system that outputs to a shared data system, or directly into a shared data system. Because of the variability in definitions of “youth participation” and their expected variance between specific programs, CYSO will need to normalize this value across CBOs to ensure apples-to-apples

tracking. From a data system perspective, once the values are normalized, it is expected that all systems would store attendance data in agreed upon formats.

2. Group students, guardians, or parents together as “households”

In order to create household-based groupings, the new data system needs:

- A common household identification system
- Each organization to have a consistent method of defining households
- Each organization to systematically capture household relationships – either in their own system that outputs to a shared data system, or directly into a shared data system

3. Ability to import/export to Excel (tied with ability to batch import)

Virtually all data systems allow for the ability to import/export to Excel from pre-defined templates. Organization-specific data would need to be mapped into the pre-defined Excel template before it could be imported into the data system. This functionality should be demonstrated by vendors during the procurement process to determine the extent to which member organizations would be required to reformat their data, if at all.

4. Support longitudinal tracking of program participants over multiple years

This desired longitudinal tracking of program participants over multiple years is geared at showing the impact of programming on youth over the long term (e.g., what long-term college or career outcomes are achieved? What do youth do or what do they become involved with over time?). These data can be used to identify outcomes at key college and career transition points (e.g., eighth grade to high school) or to identify changes in attitudes, beliefs, or skills.

“Tracking” of participants is simply storing of data about participants year over year. However, typically it is not enough to track the data; some analysis and reporting on this tracked data is required to make it useful. A common set of measurements across all organizations would be required to have any meaningful data that could be compared over time or across programs. Otherwise, each individual organization would need the ability to track their specific program participation variables independently.

Longitudinal tracking for year-over-year comparison can become complex when there are either gaps in data or the underlying measures change from year to year. These issues are data-dependent and not particular to any system.

5. Administer outcome assessments

Outcome assessments are expected to vary from organization to organization. The underlying requirement in this area is to have a survey and analysis capability as a module/component of the “to be” data system. This tool should be easy to set up, use, and able to support desired analysis functions. One example is CYSO’s Youth Survey. As indicated in Table 1 other out of school time (OST) programs use specific tools for outcome assessments, including the PSA OST Observation Tool, PQA by High/Scope, Assessing Afterschool Program Practices Tool (NIOST), or a Program Quality Self-Assessment Tool (NYSAN).

Table 1: **Tools used in CBASS city systems²**

CBASS Intermediary	Quality Assessment Component	Tool Participant Tracking Tool
Baltimore's Safe and Sound Campaign& The After-School Institute	OST Observation Tool (PSA)	Efforts to Outcomes
Boston After School and Beyond	PQA (High/Scope)	Cayen
After School Matters (Chicago)	CARE-ful Assessment & piloting PQA(High/Scope)	PAM (Program Administration Manager) Implementing Youthservices.net in 2009 (Cityspan)
DC Children and Youth Investment Trust Corporation	Assessing Afterschool Program Practices Tool (NIOST)	Webstars; Youthservices.net (Cityspan)
Prime Time Palm Beach County	Palm Beach County PQA (High/Scope)	N/A
Providence After School Alliance, Inc.	Rhode Island PQA (High/Scope)	Youthservices.net (Cityspan)
The After-School Corporation (New York City)	OST Observation Tool (PSA) & Program Quality Self-Assessment Tool (NYSAN)	Youthservices.net (Cityspan)

Based on the ESS report, there are some considerations for selection of a new system, including:

- Should work with multiple browsers including Internet Explorer;
- Mobile versions are not a high priority given that only 23 percent of organizations provide smartphones to staff and even in these cases, they were provided to only some employees;
- The "comfort level" of working with databases was averaged at 5.2 (on a scale of 1 to 10), so the deployed system needs to be extraordinarily easy to use; and
- Integrated assessment and survey tools to help measure outcomes.

Items that are not needed in the system:

- Financial tracking including collecting/tracking payments; and
- Agency, site, and staff management functions such as processing online registration, tracking staff credentials, publishing online provider directories, and recording organizational characteristics.

² *Speaking in One Voice: Toward Common Measures for OST Programs and Systems*. November, 2008.

Data elements to be collected

Based on the ESS report, the data elements in Table 2 are the most consistently collected across the surveyed organizations. These need to be cross-referenced against the desired/candidate indicators (see Appendix D) and the data fields expected to be available from P2 (see Appendix E). This cross-referenced set of data elements would be included in any materials provided to vendors for cost estimating purposes. The selected data elements will have implications for CBO data collection, thus those organizations should be involved in their selection.

Table 2: **Data elements currently tracked or desired by CYSO members**

Data Element	% of Members Tracking or Desire to Track
Current enrollment	100% currently track
Attendance data, most commonly attendance duration and attendance intensity	93% (14 out of 15) currently track some attendance data
Program quality data	91% currently track
Previous enrollment in programs	88% currently track
Academic gains	100% of respondents strongly desire (rating 3 or higher on 5-pt scale) to collect data
Skills/content gains	94% of respondents strongly desire (rating 3 or higher on 5-pt scale) to collect data

The needs and challenges of CYSO members identified by ESS are typical across social service organizations as reported in the recent Idealware report³. In the summer of 2013, Idealware created and distributed a survey to learn how human service organizations from their mailing list were actually using technology to measure and evaluate program outcomes. The survey looked at a general overview of outcomes measurement and program evaluation topics from how frequently they look at data and how much time they spend doing so to what types of metrics the organizations were tracking.

The results clearly show that the respondents are struggling to measure their programs. For example:

- Many nonprofits are only tracking the most basic data to measure programs.
- Few (23 percent) are tracking any kind of long-term assessment metrics.
- Organizations are confused about what it means to measure their impact on the community.
- Most nonprofits lack the software they need. Over half of the organizations surveyed were tracking their program data in Excel spreadsheets instead of a database.
- Less than 45 percent feel their measurement methods are working.
- Over 25 percent of respondents indicated that the lack of time, money, or software was their biggest hurdle in evaluating their programs.

Needs assessment limitations

Many of the issues brought up in the ESS focus groups as challenges (e.g., staffing, lack of time, and survey fatigue) will not be solved by a new data system and in fact, may exacerbate these challenges.

³ The Reality of Measuring Human Service Programs: Results of a Survey by Idealware. January, 2014.

From the ESS report, it was believed that two existing platforms developed by WSU and the University of Arizona should be reviewed in further detail. Data2insight has not conducted that review.

In addition, it was suggested that College Success Foundation (CSF) and Catholic Community Services of Western Washington (CSWW) should be consulted for input and recommendations, given that both are interested in participating in a shared measurement system and both have extensive knowledge/experience in navigating multiple databases. Neither of these organizations was consulted by data2insight.

3. Recommended technology solution design and costs

This section provides an overview of the recommended technology solution in terms of design and estimated costs.

Recommended selection criteria

There are two kinds of selection criteria:

1. Data system architecture criteria used to evaluate architectural options for the shared data measurement system; and
2. Vendor selection criteria used to select the best company to partner with to develop and deploy the data system.

The datainsight team considered the **data system architecture** criteria, and these should be considered by CYSO during the final system selection. These consist of:

- *Peer Networking*: If a commercial software product has been used in a similar project, it is a good candidate for more in-depth consideration.
- *Industry Standard*: When looking at alternative approaches, industry standard approaches are preferred.
- *Simplicity*: The overall architecture should have a minimum number of “moving parts” meaning separate components that need to be integrated together.
- *State of the Art*: Given the pace of technology change, it makes sense for CYSO to start with a state of the art system. The technologies underlying any potential commercial system need to be understood to assess this element.

For **vendor selection**, we recommend the following criteria, with suggested weights for each factor:

- *Proposal and solution* (50 percent)
 - Quality and Completeness of Proposed Project Plan and Overall Presentation (15 percent)
 - Demonstration (15 percent)
 - Fit of solution to CYSO requirements (15 percent)
 - Ability of CYSO and/or vendor to maintain, extend, and support solution (5 percent)
- *Cost* (24 percent)
 - Cost (14 percent)
 - Cost Realism (10 percent)
- *Experience and Past Performance* (26 percent)
 - Experience and Commitment of Proposed Project Team (10 percent)
 - Experience of Firm in Similar Engagements and Overall Match (8 percent)
 - References for Similar Engagements (8 percent)

Data system ecosystem

If CYSO decides to design, develop, and deploy a new data system in the near future, it will be doing so amidst rapid technology change. All of the technology factors listed below have been or need to be kept in mind during the final selection process:

- Rapid migration to cloud and software-as-a-service delivery models;

- Tools to support real-time decision making;
- Social computing;
- Mobility/Bring Your Own Device – investment to ensure the software works across different types of mobile and other devices;
- “Big Data” – the availability of very large collections of external, commercial, and/or public sources of data that can be used to normalize, compare, and analyze specific data against continued expectations for self-service including the ability for constituents to see the history of their interactions with the data system;
- Introduction/availability of web services to integrate arbitrary systems;
- Availability of easy-to-use, visual analysis tools; and
- “Agile” software development: In this methodology, requirements evolve through collaboration within a self-organizing, cross-functional team.

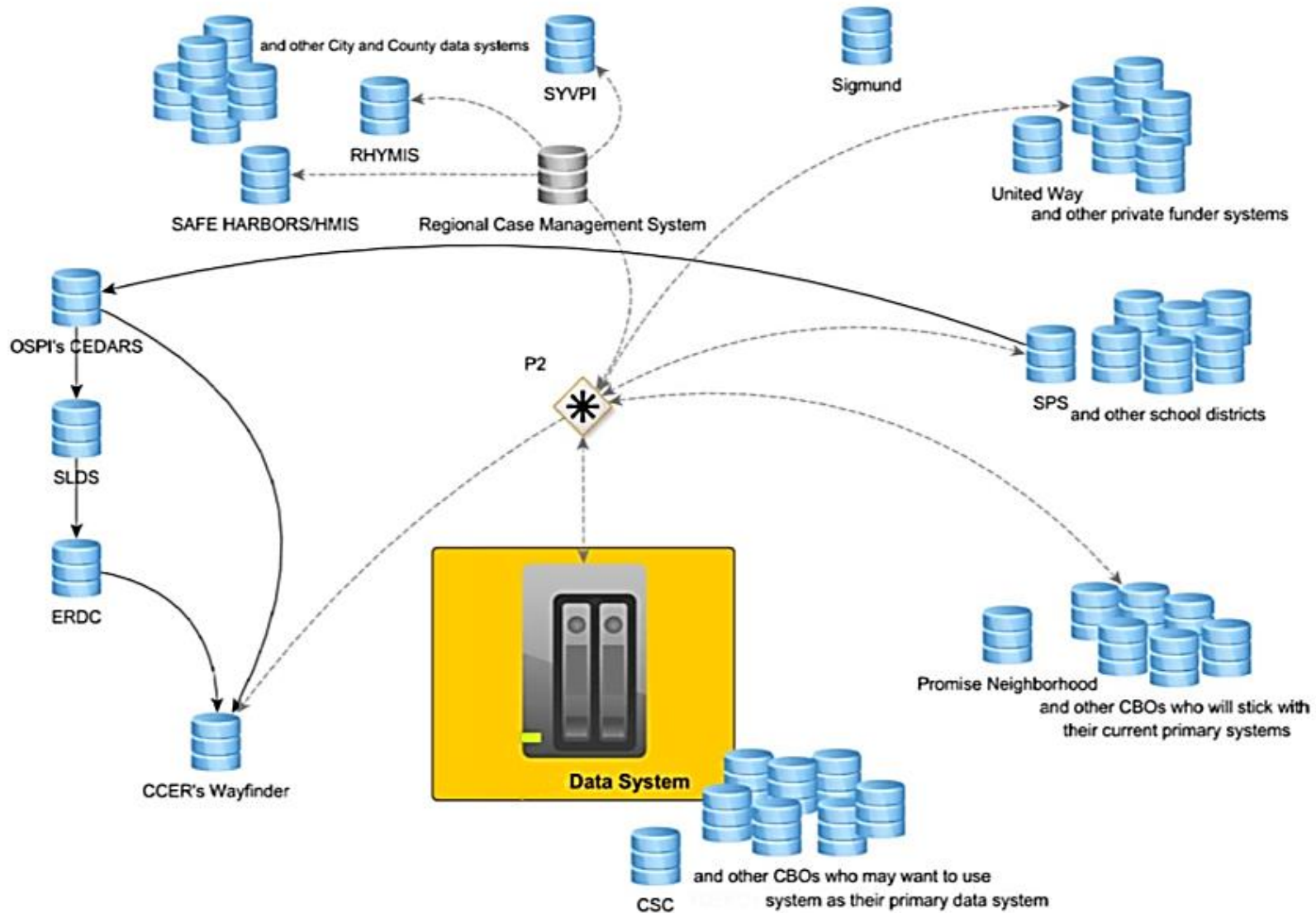
Our recommendation took into consideration the above technology trends when recommending the data system.

At a high level, the CYSO data system will live within a County and Washington State ecosystem of data systems (see Figure 2). The P2 system is planned to serve as an interface and normalized data source for CYSO to most of the other systems. The only other interface exists between the member CBOs and the CYSO data system. This larger technology context was a key contextual element consideration in this data system recommendation.

Furthermore we considered the Race to the Top early learning challenge report⁴. This report indicated that states involved in this initiative were taking one of two architectural options to link existing ECE databases across program and agency silos and across levels of data – either a data warehouse approach, or a federated data system.

⁴ *Developing Coordinated Longitudinal Early Childhood Data Systems: Trends and Opportunities in Race to the Top Early Learning Challenge Applications*. September, 2012.

Figure 2: County data systems map – future state



Proposed system architecture

The CYSO system will take a data warehouse approach – suitable for the type of persistent, longitudinal analysis desired. A data warehouse is a central hub to house data from different agencies. It is worth mentioning, as the Race to the Top early learning challenge report does, that (unnamed) “data experts” reported that a federated system can be less costly to develop. However, in a federated data system, data remains in existing organization databases. Given that many of CYSO’s member CBOs do not have existing databases, there is a need to have a data warehouse in which to store data. Furthermore, a data warehouse more easily facilitates research and analysis.

Table 3: Key functional requirements of the data system

Component	Description	Rationale
Configurable database	Data structure that can be end-user-modified to add in additional data elements.	This requirement is needed to allow for CBOs to add in data fields particular to their programs so they can potentially use the system for their own particular data tracking needs
Quality Assessment and Survey Tools	Measurement instruments for collecting program and student level data	This will allow collection of program and county level quality and impact data
Analysis and Visualization	Analytics tools	Longitudinal tracking and calculation of statistically significant improvements over time, and comparisons across programs. Visualization tools are important to allow end users to easily see trends and takeaways from data.
Reporting	Generates customized reports	This capability is needed for CYSO review and collection of basic statistics, as well as to allow CBOs to use the data system for their own purposes
Interface to P2	Bridge to P2	The P2 integration methods are in development
Interface to other systems	Single, standardized method of input and output to other systems.	For larger CBOs, a standardized integration protocol must be defined to be implemented

These requirements are nominal and can be achieved through the configuration of standard, commercial software tools. The core database should be selected first, followed by finalization of additional components. We look at the component options individually next.

Configurable database and quality assessment

We recommend the first of three primary approaches to selection of the core database component:

1. Select an existing, commercial product/capability. We have identified these systems as the initial candidate vendors:

- EZReports by ThomasKelly, www.ezreports.org/
- CitySpan Technologies’ Internet-based data tracking system, youthservices.net



- Social Solutions' Efforts to Outcomes (ETO), www.socialsolutions.com/
- Comet Informatics, www.comet4children.com/
- Cayen Systems, www.cayen.net/
- CiviCore, www.civicore.com/
- nFocus Solutions, www.nfocus.com/

In general, we recommend a commercial off-the-shelf option that will meet CYSO's needs for two reasons:

- Building/configuring software is riskier in terms of performance, budget, and schedule; and
- A commercial off-the-shelf option requires more expertise in technology project/vendor management, which reduces the performance, budget and scheduling risks, and increases the likelihood that the data system meets the organization's needs.

The key factor for recommending these vendors was that they have implemented systems with specifications that match CYSO's criteria, and have done so for multiple clients. While small software companies may offer to sell a capability that has been previously developed, without an existing base of clients currently running the software being sold, there is unacceptable risk that the capability will not be maintained or expanded in the future or that the organization can provide adequate technical support.

Other social services systems that are market leaders and may be able to address the CYSO requirements include: Persimmony, Bowman Systems (ServicePoint, CommunityPoint, GatherPath), Data Systems International (ClientTrack), Adsystech (used by YouthCare), Imagitek, CS&O (PEDS vendor), WebSTA-Q for YouthBuild, JMPT, Commence, and ExtraView with Traction software. There are other potential Data Warehousing options that include eScholar, TetraData, Spectrum K-12, inBloom, Schoolnet, or SAS.

Non-recommended approaches (see Appendix F)

2. *Modify an existing implementation from another jurisdiction – for example, the California Regional Health Information Organization (CalRHIO)'s technology platform, provided by its technology partner Medicity.*

Assuming that the vendor and/or jurisdiction approves CYSO's use and building upon an existing implementation (not necessarily the case), this approach would require extra effort to determine if it could save a significant amount of money over alternatives. We do not recommend this approach because we suspect it further complicates the selection process without a likely large savings.

3. *Configure the data system from constituent parts – that is, create a custom database.*

There are standard commercial database products that can be used, but Microsoft SQL Server is the easy option. This market leader makes the most sense given its market share and value given Microsoft's donation program for nonprofits, wide range of developers, and relative cost of ownership to other market leaders like Oracle and the overall rich software and developer ecosystem. The database can be deployed in the cloud-based Azure environment. We do not recommend this approach because it is riskier to build a solution than buy one already created.

Survey and assessment functionality

The following extract from the National League of Cities publication (Figure 3) illustrates how some systems come with survey tools, and others do not and would necessitate the selection and integration of a separate, best-of-breed tool.

Figure 3: Survey and assessment instruments⁵

	Cityspan	COMET	ETO	CI ODM	KidTrax	EZReports
Administer surveys and outcome assessments	✓	✓	✓	✓	✓	✓
Online distribution to non-participants (parents, teachers)	NO	✓	✓	✓	✓	NO
Responses keyed to specific recipients	NO	✓	NO	✓	✓	NO
Administrators can create custom surveys and assessments	✓	✓	✓	✓	✓	NO

If CYSO's selected system comes with a survey instrument that will meet the organization's desired survey needs, then no separate survey instrument will be needed. Because this is only one factor to be considered, a data system that did not include survey capability might be selected based on other evaluation criteria, necessitating a second selection of survey tool. In this scenario, we would expect the core data system vendor to participate in the selection of the survey tool. The key requirement is the ability to configure assessments/surveys to evaluate the desired measures identified as part of the shared measurement initiative process.

Furthermore, Table 1 summarizes the quality assessments and data systems used by OST initiatives across the United States. These examples illustrate how various survey components and data system software can work together.

Notes on analytics, visualization, and reporting

There are common, state-of-the-art tools to assist in the analysis and visualization of the data expected to be collected by the shared measurement system. For example, Tableau is in successful use at (recently spun-off from Aspire Public Schools) www.schoolzilla.org. Which of the potential tools should be included in the overall data architecture will depend on the capabilities that come out of the box with specific data systems, and which options might come pre-integrated with the specific data systems. Examples of other potential data analytics components include Always Prepped or Education Elements.

Whether or not an additional reporting system is needed (e.g., Bright Bytes, Datacation, Eduvant, Data Director, or Schoolforce) will depend on the software package selected.

System Interfaces—primarily with P2

We have the following system interface recommendations:

- Interfaces into and out of the CYSO system should be based on open formats and use web services (ReST or SOAP protocols).
- If possible, the interface protocols should be the same as those used for the P2 system.
- When possible, data definitions and schemas should leverage other pre-existing data standards.

⁵ *Building Management Information Systems to Coordinate Citywide Afterschool Programs: A Toolkit for Cities*. National League of Cities, 2012.



The purpose of the Road Map Race to the Top Project 2 (P2) is to 1) coordinate the collection of common data elements; 2) automate the flow of that data from district to district as students move; 3) automate the flow of appropriate student information between districts and CBOs; 4) present data in a meaningful form to all users; and, 5) provide data to educators to support personalization of instruction.

Given that the shared measurement system will interface with P2 to pull data that overlaps between data available in P2 and data of interest/to be collected in the CYSO shared data measurement system, if possible/practical, it makes sense to follow the same protocols to be used by P2. This is recommended because CYSO will have to implement methods for processing/handling data interchange between the data system and P2. Because P2's current thinking (open standards and web services) will accommodate CYSO's needs to integrate with other systems, the system architecture is simplified by having one method and protocol of data interchange for all interfaces. Data transferred in the P2 system should use open formats, such as CSV, XML, JSON, and ODS; and P2 is planning to use open standards for data interchange such as RESTful web services, and open standards for defining data schemas such as SIF, Ed-Fi, and CEDS.

System functions

CYSO's data system functional requirements are currently at a very general level, including the previously mentioned functions from the ESS report. Reporting features are also important. Member CBO's most frequently referenced benefit of a shared measurement system was the ability to know more about what youth are doing and how they are spending their time. This interest was reinforced with the results of the card sorting activity that resulted in the below list of top five desired functions:

1. Track youth participation across different/multiple organizations.
2. Group students, guardians, or parents together as "households."
3. Ability to import/export to Excel (tied w/ability to batch import).
4. Support longitudinal tracking of program participants over multiple years.
5. Administer outcome assessments.

The focus groups revealed additional proposed benefits of a shared measurement system:

1. Promoting cooperation and partnerships between organizations; and
2. Learning best practices.

There are many additional functions required for the data system that need to be developed, reviewed, approved, and included in materials for vendors to price against. Most of the P2 Data Transfer System requirements would be applicable to a CYSO data system. We believe that, like the P2 data system, the CYSO data system will need to address these specific functionality requirements:

- Keep track of how each CBO stores different data elements and how to translate them centrally (a central data dictionary);
- Know which organizations and districts have access, and what they are allowed to do in the system (participating entity management);
- Verify a person's identity before letting them access certain parts of the system (user identify and access management);
- Translate, clean up, and validate that data is ready to move from one system to another (translate/cleanse/validate);

- Provide screens for people to make a request for student data or approve and track the status of a request (request management);
- Use secure transport methods to securely move data from one system to another (data brokering);
- Store which entities can view what data for what students (consent management);
- Take back data after it has been shared, or request that it is destroyed, based on consent (revocation);
- Track everything that happens in the system and who did what (audit); and
- Send notifications when certain actions happen (notification).

As a simple, concrete example, the new system needs the ability to grant and revoke access, likely with a CBO-designated primary member who can assign individuals within their CBOs access as appropriate. In addition to these types of requirements not captured or documented to date, there are additional functional requirements that are likely needed but not included in the member needs survey. For example:

- In CYSO's original RFQ for the data system consultant, it was expected that the shared measurement system would have the ability to "facilitate referral/collaboration in service provision for young people across schools, other CBOs, and funders." While the P2 system is being conceived to allow for "one click" transfer of data from one institution to another as needed, this type of requirement has not been articulated or documented to date.
- The specific evaluation requirements/quality assessments planned.

Security requirements

In terms of information security requirements (for example, to prevent the data from being compromised or "hacked"), CYSO would be depending on the security of the commercial system itself. None of the options presented here could be successful in the market if they were not built with adherence to standard industry best practices in this area. That being said, this is just one area that needs to be "checked off" during the vendor selection process.

All the data planned to come from the P2 system will adhere to FERPA requirements, and CYSO will only have access to that data if they adhere to these requirements as well.

Assumptions and constraints

One constraint, from the ESS report, is the fact that some organizations already have to "navigate a multitude of privacy laws and data sharing agreements." Adding another level of privacy issues may introduce an additional barrier to adoption. Regarding FERPA and data sharing agreements, ESS focus group participants suggested exploring the idea of having a single release form that parents could sign for all participating organizations or create agreements with schools for affiliated organizations.

Assumptions consist of the following:

- There are only three interfaces that need to be defined - CYSO will not want or need any data elements from any of the indicated other data systems like the United Way, Safe Harbors, and so forth, except through the P2 interface.
- CYSO's new systems environment is cloud-based and ideally provided via a Software-as-a-Service (SaaS) model. SaaS will reduce the time to obsolescence of the investment to be made, and increase the reliability and security of the core software environment. The cost

implications have to be carefully analyzed. The industry promotes that SaaS provides a superior overall cost, with providers being able to innovate more quickly and have higher operating margins than non-SaaS products (due to reduced maintenance of there only ever being one release).

- Commercial capabilities are preferred over custom-built capabilities. Open source solutions can be considered commercial capabilities when a commercial support provider is available to maintain the software as a core part of the organization's business. Even half a dozen years ago, a "build vs. buy" analysis would be appropriate at this juncture. However, given the risk and cost of a custom implementation, and availability of technical options, designing and implementing a custom data system would only make sense if commercial options cannot meet CYSO's needs.
- The P2 system will be live and operational in time to insulate CYSO from having to design and implement separate bridges to the systems that house data planned to be included in the shared measurement system. If the system is not live in time, then CYSO would need to implement all the connections to other systems to get data needed for specified shared measurement.

Ownership characteristics/criteria

When the shared measurement initiative is defined, the collaborators will need to determine what organization will be the single "owner" of the data system, responsible for its upkeep, maintenance, and user support, as well as fielding additional requests for enhancements. We expect that the proper system owner will emerge during the shared measurement initiative process.

4. Recommended procurement process

In order to identify the best software package, we recommend that CYSO first review the commercial software options and only if these are inadequate, pursue one of the other options identified on page 5. We recommend a phased approach to procurement that will accomplish a number of objectives:

- Help educate the data system selection committee on what potential systems are capable of doing.
- Rapidly determine which systems may be good candidates and which are not good candidates, saving both the vendors and CYSO time.
- Help vendors better understand CYSO environment and prepare implementation plans and proposals.
- Provide perspectives on whether a custom implementation may be preferred because of a non-trivial mismatch between pricing and/or functionality of commercial options and CYSO's environment.

Recommended procurement process:

- **Step 1:** Finalize procurement documents outlined here:
 - Functional and non-functional specifications document (see Appendix D, excerpted from the Race to the Top Project 2 Draft Data Transfer System Requirements, an exemplar for system specifications);
 - A list of the candidate indicators and their source (P2, CBO, data input form/quality assessment);
 - A description of any data sources to be loaded initially as a one-time data migration to pre-populate the system;
 - The "to be" architecture and simple description of primary components; and
 - Agenda of specific functions to demonstrate so the demonstrations are comparable.
- **Step 2:** Invite four to six of recommended vendors (see page 5 for vendors) using modified RFI document (see Appendix A) to provide demonstration of capabilities. This approach provides a relatively quick and easy way to determine if a commercial system will meet CYSO's needs or not. A result of this step is to narrow the field to two to three vendors.
Contingency plan: Consider alternative options if the commercial options look too few, or have other issues that motivate this path.
- **Step 3:** Provide selected vendors with detailed request for pricing and implementation plan.

In step 3, CYSO will request that vendors create a specific project plan and pricing in a specific format for evaluation as well as references (see Appendix D for template). This request will ask vendors to provide:

1. All one-time implementation costs, broken down by:
 - Initial requirements validation, discovery, and overall project understanding
 - Finalization of overall system architecture (for example, inclusion of survey tool, report writer tool, or dashboard tools)
 - Configuration and customization of selected tool to meet CYSO's overall needs
 - Implementation of standard interfaces with CBOs – assume 20 CBOs
 - Integration with P2

- Data import from legacy sources
- Pilot and modifications based on pilot user group feedback
- Training and documentation
- 2. All software-related costs broken down by:
 - One time purchase option or annual monthly cost
 - Maintenance and support
- 3. Description of the pricing model for the software, in terms of license types, and licensing model.
- 4. Describe how additional customization requests not included in the initial contract will be handled and what pricing model is used to determine those customization costs. If some of these costs may vary, explain the major cost determinants and provide a range and average and any other assumptions that impact the pricing.
- 5. Answers to the following questions (modified from the National League of Cities' report):
 - How much time would you recommend that CYSO allow between contract award and full implementation (assume a well-specified system)?
 - What steps do you take to ensure a successful implementation phase (e.g., do you provide a project manager? Do you recommend bringing all organizations into the new system together, or a phased-in approach?)?
 - What resources do the local partners need to commit in order to make implementation a success? What person(s) are required, what skill sets are required, and how much of that person's time is needed?
 - What information do you need from the various partners to successfully manage the implementation phase?
 - Are there other best practices that you would like to suggest to communities who are undertaking a project like this?

Budgeting

The cost of the new system will vary depending on a wide variety of factors, and getting a more refined cost estimate is an iterative process that starts with inputs from the vendors that will result in a system tailored to CYSO's needs and capabilities.

Based on our market research and our experience in the information technology market, we provide a cost estimate for initial data system design, development, and deployment as follows:

Table 4: Initial data system design, development, and deployment

Task	Budget	Time Period
Initial requirements validation, discovery, and project understanding	\$20,000	2 months
Finalization of overall system architecture (for example, inclusion of survey tool, report writer tool, or dashboard tools)	\$7,500	1 month
Configuration and customization of selected tool to meet CYSO's overall needs	\$75,000	9 months
Implementation of standard interfaces with CBOs – this assumes 20 CBOs, and \$2,000 per CBO	\$40,000	6 months; concurrent with design, development, and deployment process
Integration with P2	\$5,000	1 month
Data import from any legacy sources	\$10,000	1 month
Pilot and modifications based on pilot user group feedback	\$5,000	1 month
Training and documentation	\$5,000	1 month
Total	\$167,500.00	1 year

Additional costs are consolidated below.

Table 5: Additional data system costs

Data system element	Cost
Estimated one-time software license cost (will vary depending on vendor selected)	\$100,000
Maintenance and support (annual cost)	\$15,000/year
Staffing costs assuming 3 FTEs at \$100K each – this needs to be modeled and only 1 FTE is a technical asset (see Appendix G for example job descriptions of recommended staffing)	\$300,000/year

Assumptions and constraints

These pricing data are not based on actual license costs solicited from vendors, but are in line with the reported costs from our market survey, and our experience with projects of similar magnitude and complexity.

There are many variations in pricing – which make it challenging to make cost estimates without having more specifics about the common measures and intended goals of the shared measurement initiative.

Specific variables that impact the cost of the license fee (not the cost of the implementation) include:

- Number and type of users;

- Number and type of licenses – some vendors license their products with “full” and “limited use” licenses, some license based on concurrent users, and others with named users;
- Recurring or one-time models;
- Hosting of the system – some have hosting included as part of the single monthly fee, others do not; and
- Modules - many vendors provide pricing dependent on specific modules desired, depending on scope of specified data system.

5. Recommended implementation plan

Ensuring organizational readiness

The market research and literature showed conclusively that ensuring the success of a shared measurement initiative requires best in class practices in the areas of strategic planning, cross-sector stakeholder engagement and facilitation, change management, solving adaptive challenges, systems-thinking, and fundraising. Furthermore, organizations that undertake such initiatives need a willingness to break from traditional ways of solving the problems/opportunities they are focused on, and to recognize that technology is a small, yet critical, piece of the puzzle.

For an organization to take on a shared measurement initiative, it must be prepared for the long journey ahead if it wants to reach its desired destination. To this end, data2insight created a readiness assessment tool adapted for CYSO.

Overall, CYSO has work to do before it is ready to take on a shared measurement initiative. Board members reported that they are most prepared when it comes to having a culture and practice of using data for continuous improvement among members and broad engagement of field organizations. In contrast, they are least prepared when it comes to ongoing staffing for a data system and openness to joint accountability for youth outcomes.

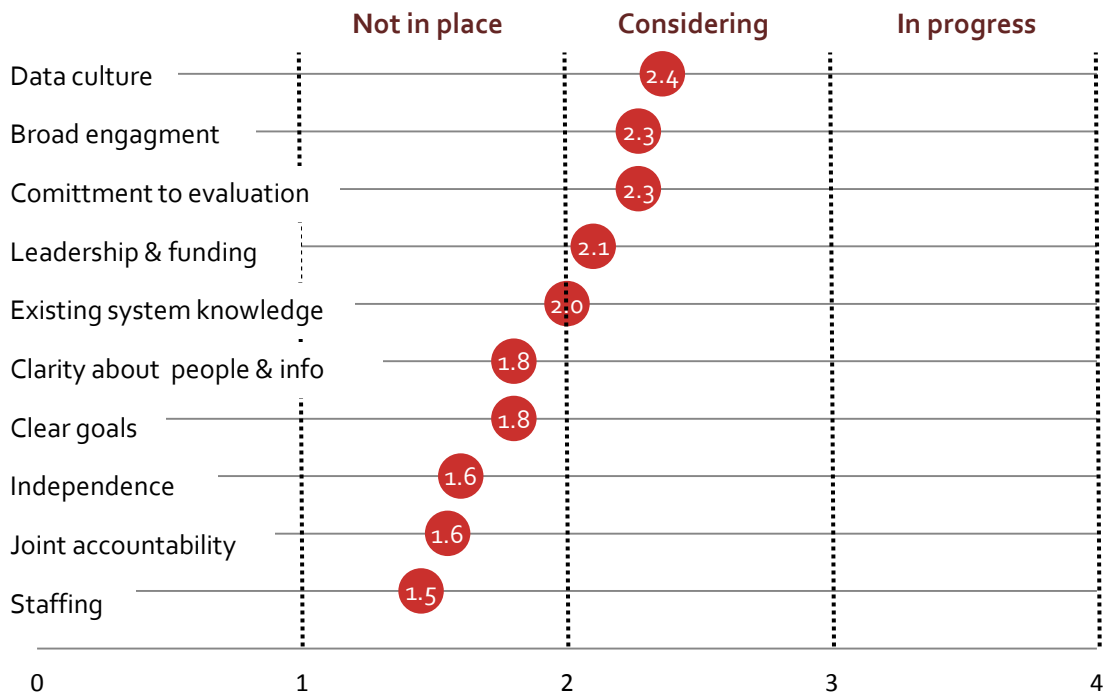
For each of the 10 indicators, board members were asked to select one of the following:

1. **Not in place:** This indicator is not currently met by CYSO.
2. **Considering:** This indicator has been explored and/or considered, but no progress has been made yet.
3. **In progress:** Some work has been done to accomplish this indicator, but it is not yet complete.
4. **In place:** This indicator represents a resource, system, or process that is in place.

Notably, the board reported considering 5 indicators and that 5 others were not in place. There were no indicators that were reported to be in progress or in place.

CYSO board members completed the readiness assessment in December 2013. The results are summarized in Figure 4.

Figure 4: CYSO board considering half of data system readiness factors and other half not in place*



* Legend:

1. **Data culture:** A culture and practice of using data for continuous improvement among member CBOs.
2. **Broad engagement** in the design process by many organizations in the field, with clear expectations about confidentiality and transparency.
3. **Commitment to evaluation:** There is a commitment from CBOs to evaluate implementation and youth outcomes.
4. **Leadership and funding:** Strong leadership and substantial funding throughout a multi-year development period.
5. **Existing system knowledge:** Know which existing data systems need to be accommodated.
6. **Clarity about people and information:** Clarity about which people in member organizations to include and how to connect them to flow of information.
7. **Clear goals** for the shared measurement system.
8. **Independence** from funders in devising indicators and managing the system.
9. **Joint accountability:** CBOs are positioned to share data and are open to joint accountability for youth outcomes.
10. **Ongoing staffing** to provide training, facilitation, and to review the accuracy of all data.



Recommendation: Based on the board's self-assessment results, CYSO's board leadership, in partnership with CYSO management, should develop an action plan (see Appendix B) to put in place clear goals for a shared measurement initiative. **It will be critical for the Board to understand the role, purpose, and uses of the data system, so that they can provide the necessary support for its design, development, and deployment. It is also critical that leaders on the Board be identified that will commit to lead Board efforts for the 2-year implementation process.**

CYSO road map



The critical next step we recommend is bringing together the following to inform the **development of a shared measurement initiative road map:**

- Board action planning work;
- Strategic planning efforts;
- Overview of work to date on identifying common measures;
- Member technology needs assessment (ESS report);
- Market research and literature review (by datazinsight); and
- Draft framework for action, for purposes of creating a CYSO shared measurement road map for the next 3 to 5 years.

Partnering with a skilled external facilitator with experience working with boards and youth development organizations in County will help ensure success achieving this goal.

This road map could be finalized in 1 to 2 months and would serve as the foundation for CYSO's fundraising efforts.

In addition, **CYSO should specifically articulate the roles and responsibilities of the primary person who will lead and manage the shared measurement initiative.** Depending on the frequency of data collection and peer learning activities, this could be either a part-time or full-time position. This person should have project management and relationship development skills, as well as experience working with data and data systems.

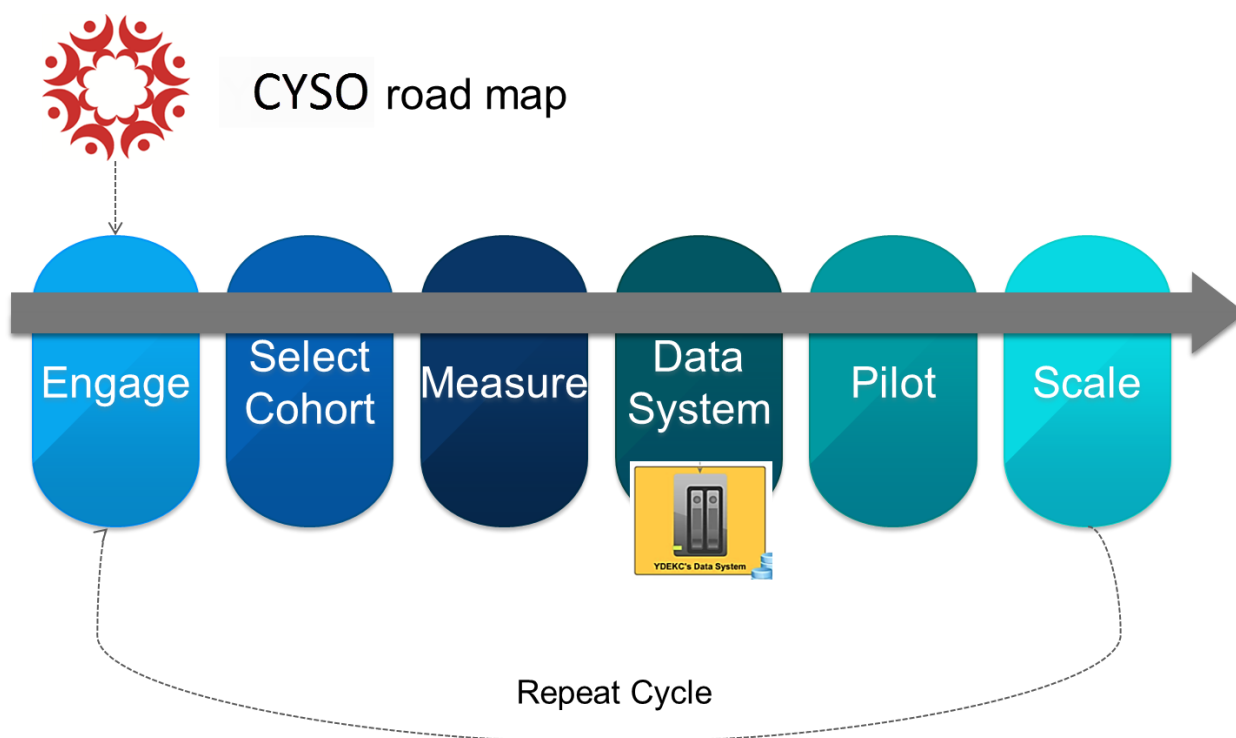
Implementation plan overview



Once the organization is ready (as defined by organizational readiness assessment above) and a road map has been developed, the five phase plan outlined below could be completed in approximately 2 years' time (see Figure 5). The sixth phase would entail refining the pilot model based on evaluation findings and re-launching with a new cohort of member organizations.

- **Phase 1:** Stakeholder engagement
- **Phase 2:** Cohort selection
- **Phase 3:** Shared measurement selection, design and definition
- **Phase 4:** Data system procurement and development
- **Phase 5:** Shared measurement pilot
- **Phase 6:** Scale by refining and re-launching with additional member organizations

Figure 5: CYSO implementation plan



Phase 1: Stakeholder engagement

The key goal for this phase is to answer the following questions: Who are the stakeholders you want to be at the table for this initiative? How often do you want to engage them? In what ways?

The key to success for this phase is communication and skilled facilitation. Different stakeholder groups will require different frequency and format(s) of communication.

In the second phase we recommend **development of partner norms, shared values and set expectations**. The criticality of these strategies is evidenced in the evaluation findings of The Bill and Melinda Gates Foundation's Community Partnership portfolio⁶. This initiative provided support to 15 cities from 2009 to 2013. A key component of these cross-sector partnerships was the use of data and leveraging of stakeholder commitment to align policies and practices that would promote postsecondary success for low-income students in their communities. One of the key lessons from this portfolio evaluation that have implications for how communities use data was: **Take time to build relationships and structures to support data use and interpretation**.

An excerpt from that report described, "Sites that began crunching numbers and presenting data to partners produced reports quickly, but often spent significant time explaining and defending their findings, easing partner tensions, revising reporting processes and definitions, and reconciling stakeholders' interpretation of data. On the other hand, sites that took time to understand partners' data capacities,

⁶ Using Data to Advance a Postsecondary Systems Change Agenda by OMG Center for Collaborative Learning, Community Partnerships Issues Briefs Series. November, 2013.

and created common definitions about the data being investigated, benefited from stronger partner relationships and a sustained commitment to using data for continuous improvement.”

We also recommend developing a **comprehensive stakeholder communication plan**. An example of an organizing tool for this effort is provided in Appendix H. The OMG Center of Collaborative Learning report provided these questions for communities to consider as they work to create and strengthen data strategies that support systems change:

- What support and buy in is necessary to access data and usable analyses?
- What data capacities exist in the partnership? What additional data capacities does the partnership need?
- Who should be at the table as the partnership analyzes and interprets the data?
- Who can bring alternative perspectives and solutions as the partnership seeks to identify data-based actions?
- How will the partnership balance a culture of data that focuses on learning and inquiry, as well as accountability and monitoring?

Phase 2: Cohort selection

A key success factor for the shared measurement initiative will be the engagement level and quality of experience of the first cohort of member organizations. These organizations will ideally become champions of the shared measurement initiative and provide opportunities to advocate for the youth development field and the benefits of shared measurement.

We recommend selecting a cohort of 15 to 20 member organizations to design and develop the shared measures as well eventually pilot test the shared measurement data system. CYSO will want to either provide an opportunity for member organizations to apply to be in the first cohort, or invite a select group of organizations to participate.

We also recommend that cohort organizations be provided an honorarium for participation to support the organization staff’s necessary investment of time and resources to first design and develop shared measures and then participate in the pilot project. Based on similar initiatives, we recommend that an honorarium be in the range of \$5,000 to \$7,000 per year per each organization.

This phase, depending on how the cohort is recruited, could take anywhere from 1 to 6 months.

Phase 3: Shared measure selection, design, and definition

We recommend engaging the cohort in a process that will result in two key outputs of a shared measurement initiative:

1. Design and definition of common measures/metrics

We began the process of creating a framework for action and organizing candidate measures for the data system. The templates provided in Appendix I can be used for measure design and definition. A measures gallery is a technique used to engage a broad group of stakeholders in the process of buying

in to and selecting the critical shared measures. These steps are part of a performance measurement process developed by Stacey Barr⁷.

2. Development of a measurement instrument (e.g., survey)

This work will likely continue to be done in partnership with the David P. Weikart Center for Youth Program Quality. Once the common measures have been defined and agreed upon, the development of the measurement instrument(s) can be finalized.

Phase 3 is typically the most demanding for member organizations and necessitates skilled process facilitation. We recommend providing some type of celebration and a period for rest and recovery at the end of this phase.

Phase 4: Data system procurement and development

Once the common measures/metrics are defined, the data system procurement and development process outlined in Sections 3 and 4 can begin.

Phase 5: Shared measurement pilot

The pilot will put the CYSO shared measurement system design to a field test. Data sharing agreements should be put in place before the pilot begins and partner norms and values should be revisited. An evaluation plan should be designed to collect evidence both formatively and summatively. Evaluation can help determine the successes (and failures) of the pilot and what led to those successes and failures. These lessons will help inform scaling strategies. Positive outcomes can be used to promote the initiative to candidates for the next cohort and to demonstrate success to existing stakeholders. Positive outcomes can be helpful in generating additional funding and other resources to scale the initiative even further. Demonstrating that evidence of failures has been used along the way to inform course corrections and plans to improve the process in the scale up phase will also be valuable to communicate to stakeholders and will result in increased trust and commitment across stakeholders.

Phase 6: Scale up

Scaling the initiative amounts to replicating the process with a new cohort, thus expanding the number of member organizations participating in shared measurement and increasing the power of the data collected and capacity to measure at the field level.

Many social sector initiatives fail to successfully scale. The process of scaling is not easy; it requires stakeholder support and buy-in, careful planning and assessment, and sufficient resources to maintain quality.

As the initiative is scaled with a new cohort, the scaling process itself should be evaluated. Implementation evaluation conducted during the scaling process should focus on continuous learning and improvement; as part of this process, the evaluation findings can help inform any necessary adjustments that need to be made to the initiative to account for differences in participating organizations. Adjustments are often inevitable because it can be difficult, if not impossible, to

⁷ *How to Get Buy-In Through Socializing your Performance Measures* by Stacey Barr October 19, 2010 blog post <http://staceybarr.com/measure-up/56-how-to-get-buy-in-through-socialising-your-performance-measures/>

anticipate all the possible ways in which organizational differences can impact the needs for engaging and supporting organizations in effective shared measurement.

Implementation costs

Phase	Time frame	Estimated cost	Comments
Finalize CYSO road map	1-3 months	\$8-16K	Assumes skilled facilitator would guide leaders to bring pieces together into coherent whole; Board retreat costs.
Fundraising effort	12-18 months	\$60-85K	Covers cost of a grant writer, cost for small-scale cultivation event for key funders and stakeholders, and contract event planner, plus collateral costs as needed.
Phase 1: Stakeholder engagement	3-6 months	\$40-70K	Assumes 1 dedicated staff person (\$50,000 annual salary) and 1 consultant (\$1,500/day) co-leading process.
Phase 2: Cohort selection	1-3 months	\$40-50K	Assumes 1 dedicated staff person and 1 consultant.
Phase 3: Shared measure/metric selection, design and definition	4-6 months	\$93-115K	Assumes 1 dedicated staff person and 1 consultant. \$2,500/year per member org (N=20) to participate in this process.
Phase 4: Data system design, development and deployment	12-14 months	\$260-270K	From Section 4 in this report and includes \$100,000 licensing fee in addition to initial design, development and deployment costs. This will overlap in time and cost with phase 5.
Phase 5: Shared measurement pilot	Plan for 12 months Depends on frequency of common measures	\$270-370K	Assumes 1 dedicated staff person and 1 consultant; \$100,000 to \$200,000 for IT support, training, and technical assistance. \$5,000/year per member org (N=20) to participate for first year.
All phases	45-62 months	\$771-976K	Time line can be expedited if phases overlap; phases 3, 4 and 5 are likely candidates for overlap.

Assumptions and constraints

The design, development, and deployment of the shared measurement system are dependent on the implementation of the P2 system. The schedule information we have for P2 implementation is:

- September 1, 2014: System functional, but might not include all datasets.
- December 31, 2016: All datasets included.

Based on this time line, data required for CYSO's data system may not be available through P2 until 2017.

6. Things to consider regarding a shared measurement initiative

Key challenges and opportunities for CYSO to consider include:

The **biggest risk to this project is in selecting a data system BEFORE the organizational and functional details of what system is supposed to accomplish have been identified and planned for.**

In particular, CYSO is still working on critical components including a theory of change, program quality assessment, survey measures, and possibly academic data sharing, that will need to be brought together into a comprehensive road map.

One of the most common mistakes organizations make when selecting software is engaging vendors too early in the process. Vendors should be engaged via a procurement process after there is a well-defined concept of operations, technical requirements, and clarity around usage and reporting needs for the system to be procured. Furthermore, clearly specifying a) the sources of data to be imported into any system and their format; and b) the points of integration between the data system and other external systems is necessary prior to software selection.

Another **risk is lack of leadership sponsorship.** Successful shared measurement initiatives require committed and consistent leadership. Without authentic and deep leadership support, the initiative will fail. Furthermore, transparency and effective ongoing communication modeled by leaders are also critical. If stakeholders are unsure or do not trust the purpose of the system or how the data will be used, the shared measurement initiative will not have adequate participation to result in meaningful data acquisition. One example of the type of ongoing communication that will be necessary for successful implementation was mentioned in the ESS report recommendations: training and technical support to member organizations on data collection and analysis.

There is also a **great opportunity to be leveraged at this time.** The ecosystem in which CYSO lives includes the following:

- Road Map Project lead by CCER;
- Recent approval, by County Council, of a countywide task force to propose a comprehensive plan for children and youth;
- Race to the Top grant;
- Governor Jay Inslee's support for expanding extra-curricular and after-school programs for at-risk youth; and
- New Seattle Mayor Ed Murray.

The combination of the above factors provides fertile ground for the emergence of a shared measurement initiative led by CYSO.

Why CYSO? Because CYSO is already recognized by CCER and PSESD as a representative for community-based organizations serving students in the Road Map Project region and an advocate for providing quality expanded learning opportunities to children and youth that will help them thrive in school and in life.

Why now? Because County is moving forward with a comprehensive plan for children and youth and PSESD is currently building the P2 system. CYSO can be a key collaborator in these efforts to ensure that the needs of youth (from a whole child perspective) are best met if it creates a clear road map for shared measurement that will provide the information needed to improve program quality and outcomes across the youth development field. This information does not exist now and is important to informing all the other education efforts in the region and state.

Appendix A: Draft request for demonstrations/presentations

We have modified the draft RFI based on the National League of Cities document to include the candidate indicators we have as place holders and filling in the functions and data elements. The data source to be loaded initially is P2. This RFI would serve to guide the vendors in their in-person presentations and demonstrations.

About Youth Development Executives of County

Youth Development Executives of County (CYSO) is a non-profit youth development intermediary organization in Seattle, Washington. Founded in 2011, we have 93 member organizations and continue to grow.

Our mission:

To build and organize the youth development field in County.

Our vision:

Every young person has the opportunity to learn, lead, work, thrive, contribute, and connect with active support from organized, networked, and unified youth development efforts in County.

Who we are:

We are Executive Directors, CEOs and other key leaders of non-profit organizations directly serving **youth ages 5 through young adulthood** within County.

CYSO is guided by the belief that we will have broader and deeper impact working together than in isolation. We have identified three principal strategies for building the youth development field. We aim to: 1) speak as a coordinated field with a **shared voice**; 2) adopt **shared measurement systems**; and 3) define and promote **shared standards of practice**.

To learn more about CYSO, please visit <http://www.CYSO.wordpress.org>.

Purpose of this request for demonstration

This request for demonstration is issued solely for informational purposes and does not constitute a procurement or solicitation.

One of CYSO's essential field-building strategies in 2011-2013 has been to implement **shared measurement systems**. To do this, we are working with a team of advisors to identify common youth development outcomes and indicators, and to develop technology and other infrastructure to collect data on these outcomes and indicators at the organizational and aggregate levels.

To date, we have convened more than 200 service providers and 75 youth to define priority outcomes and indicators. We have also worked with providers and local school districts to identify critical academic data points, and to develop and pilot improved processes for data sharing between school districts and community-based-organizations (CBOs). The proposed shared measurement system will link and store academic information from the Seattle Public Schools with afterschool program participation data. The afterschool programs will likely collect the student ID (or equivalent) from each participant when they enroll, along with parent/guardian permission to share academic information.

There will be a single system that has collected student data from the schools themselves, as well as other agencies and a single interface will allow for the download of data to the CYSO system where data elements are in common with this system (P2).

As a next step, we are exploring the possibility of investing in a shared Management Information System that will allow youth development organizations in County to:

- Track youth participation across different/multiple organizations and programs in youth development program(s) around County.
- Centralize collection of program level indicators and youth outcomes at the program, site, and system levels.
- Support longitudinal tracking of program participants over multiple years – to show the impact of programming on youth over the long term (e.g., what long term college or career outcomes are achieved? What do youth do or what do they become involved with over time?
- Ability to measure outcomes at transition point like from 8th grade to high school or to career/college, and/or changes in attitudes, beliefs, or skills?
- Administer outcome assessments – with pre-defined assessments or surveys are available to administer and analyze.
- Import from and export to other/planned existing data systems – currently the P2 system.

To minimize the burden on vendors and streamline the procurement process, at this stage, we are requesting demonstrations of data systems. This document includes the guidance for the company/vendor presentation and associated demonstration.

Presentation agenda

Please provide the following information about your company:

- Vendor's legal name and address
- Date the company was established
- Description of corporate structure and ownership model
- Number of employees (FTE), total
- Number of employees (FTE) in customer service and technical support

Please provide the following information about the software application(s) that you believe will best meet the needs of agencies seeking a shared Management Information System (for each application):

- Name
- Overview of the application Scope of product's user base
- Please be specific in describing how you define customers and users. For example: '# agencies in # cities, with approximately # users tracking more than # client/organizational records.'
- List of current features/functionality
- Features/functionality under development (optional)

Demonstration agenda

Please provide a demonstration that addresses the below scenarios, functions and data elements.

Data elements

CYSO is planning to collect the below data elements as part of its shared measurement system. For each data element, please come prepared to demonstrate the interfaces to view these data elements and associated reporting capabilities. The primary areas to be covered include attendance data, program quality data, academic gains (to come from the P2 system), skills/content gains, current enrollment, and previous enrollment in programs.

Indicator Name	Comments
Individual Participation	
Attendance-Intensity	Amount of time participants spend in a program within a given time period (e.g., hrs p/day, days p/wk)
Attendance-Duration	Summarizes attendance history. How long a participant has attended a program in weeks, months, or years
Attendance-Breadth	Number of different programs a young person participates in; or number of types of programs a young person participates in
Attendance-Percentage	Percentage of possible days a participant attended in a given time period (# of days attended/# of days offered)
Program Enrollment & Persistence	
Current Enrollment	Number of individuals currently enrolled in program; or percentage of capacity (# of enrolled/total capacity)
Previous Year Enrollment	Number of individuals enrolled during previous year; or percentage of capacity (# of enrolled/total capacity)
Average Daily Attendance	Percentage of individuals enrolled who attend on a typical day; calculated periodically
Persistence Rate	Percentage of eligible youth who re-enroll in a program (term to term)
Program Quality	
YPQA-like measures	CYSO creates their own measures?
Cultural competency	
Stakeholder satisfaction	
Demographics	
Grade level and school enrollment	
Access to cell phone and computer	
State Student ID #	
Housing status (Homeless, Foster Care)	
Ethnicity	

Indicator Name	Comments
Gender	
English Language Learner	
<i>Participant attitudes and behaviors</i>	
Self-management	
Future orientation	
Self-efficacy and mindset	
Belonging and identity	
Interpersonal skills	
Social and civic values	
Creativity	
Critical thinking	
Media, technology and information literacy	
Health motivation and awareness	
Independent living skills	
Academic behaviors	

Functions

Demonstrate your systems ability to:

- Track youth participation across different/multiple organizations and programs in youth development program(s).
- Centralize collection of program level indicators and youth outcomes at the program, site, and system levels.
- Group students, guardians, or parents together as “households” and affiliate youth with parents and/or siblings to form family units?
- Support longitudinal tracking of program participants over multiple years – to show the impact of programming on youth over the long term (e.g. what long term college or career outcomes are achieved? What do youth do or what do they become involved with over time?
- Ability to measure outcomes at transition point like from 8th grade to high school or to career/college, and/or changes in attitudes, beliefs, or skills?
- Administer outcome assessments – with pre-defined assessments or surveys are available to administer and analyze. Demonstrate how surveys can be created, distributed and how the input can be used in assessments.
- Import from and export to other/planned existing data systems – currently the P2 system.
- Import/export to Excel (tied with ability to batch import).

- Provide reporting, including compliance reporting and outcomes assessment, ability to create and store new reports, modify reports to include new custom data fields and alter the format. Vendors should feel free to demonstrate any additional integrated, optional components that may be of interest to CYSO, for example, business intelligence software, or dashboards.
- Ability to support web services as data import/export protocol.
- Any other integrations with other systems that might be in use by one of the CBOs to participate in this shared data measurement initiative

Vendors can come prepared to present their experience negotiating the technical and legal challenges associated with sharing information with CBOs, and any application functionality, or development experience that you believe makes your product a particularly apt choice for entities that need this capability.

Scenarios

Please provide a demonstration of your system's use for these classes of users.

Coordinating Entity Use: The Coordinating Entity should have administrative access to the MI system (for 1 to 2 users). Its major needs include:

- Periodic export of all youth participation and academic outcome information for an external evaluator, who has been qualified as an agent of the school districts for the purposes of FERPA compliance.
- A comprehensive reporting environment. The coordinating entity needs a dozen fairly sophisticated custom reports to be created as part of the initial implementation. The ability to integrate with a business intelligence application and/or to create and format reports within the MI system would be ideal. The reporting environment should allow disaggregation by site and agency characteristics, by youth demographic characteristics, and by youth participation and academic performance.
- The ability to easily complete administrative tasks such as creating provider records and user accounts; reviewing user access logs, data completeness, and record duplication; and creating (and propagating) new fields, forms, surveys and reports for agencies.

CBO Use: CBOs should be able to create and monitor their affiliated sites, run a limited set of predefined reports on youth participation and outcomes (disaggregated by site), and review site-submitted data for accuracy and completion.

Site Use: All sites use desktop computers. Some record attendance directly into the MI system web interface and others print attendance rosters and enter the information at the end of each day. Site staff would like to be able to import attendance on a daily or weekly basis from a Microsoft Excel file. Managers on-site should be able to run a set of basic, pre-defined reports.

Appendix B: Data system readiness action plan

The following grid can assist you in turning your assessment results into an action plan. Thinking through each part of your plan will ensure a more successful implementation of a shared measurement system.

[illegible]

Appendix C: CYSO framework for action

Regional vision:

Our youth are healthy and safe, socially and civically connected, academically proficient, and prepared for living wage jobs.

Regional goals:

- Youth develop skills and beliefs necessary to school, work, and life success.
- Youth are academically and vocationally prepared.
- Youth are socially and civically connected.
- Youth are healthy and safe.
- Families achieve financial independence.

CYSO vision: Every young person has the opportunity to learn, lead, work, thrive, contribute, and connect with active support from organized, networked, and unified youth development efforts in County.

CYSO goals:

- Speak as a coordinated field with a shared voice.
- Identify and agree upon specific common outcomes and indicators to mutually track, in addition to developing, retaining, and adopting technology and infrastructure to collect data at the organizational and aggregate level.
- Develop a common definition for high-quality practice and support organizations across the county to deliver high-quality programming.

Candidate indicators:

Indicator Name	Comments
Individual Participation	
Attendance-Intensity	Amount of time participants spend in a program within a given time period (e.g., hrs/day, days/wk)
Attendance-Duration	Summarizes attendance history. How long a participant has attended a program in weeks, months, or years
Attendance-Breadth	Number of different programs a young person participates in; or number of types of programs a young person participates in
Attendance-Percentage	Percentage of possible days a participant attended in a given time period (# of days attended/# of days offered)

Indicator Name	Comments
<i>Program Enrollment & Persistence</i>	
Current Enrollment	Number of individuals currently enrolled in program; or percentage of capacity (# of enrolled/total capacity)
Previous Year Enrollment	Number of individuals enrolled during previous year; or percentage of capacity (# of enrolled/total capacity)
Average Daily Attendance	Percentage of individuals enrolled who attend on a typical day; calculated periodically
Persistence Rate	Percentage of eligible youth who re-enroll in a program (term to term)
<i>Program Quality</i>	
YPQA-like measures	CYSO creates their own measures?
Cultural competency	
Stakeholder satisfaction	
<i>Demographics</i>	
Grade level and school enrollment	
Access to cell phone and computer	
State Student ID #	
Housing status (Homeless, Foster Care)	
Ethnicity	
Gender	
English Language Learner	
<i>Participant attitudes and behaviors</i>	
Self-management	
Future orientation	
Self-efficacy and mindset	
Belonging and identity	
Interpersonal skills	
Social and civic values	
Creativity	
Critical thinking	
Media, technology and information literacy	
Health motivation and awareness	
Independent living skills	
Academic behaviors	

Appendix D: Example functional and non-functional requirements

Excerpted from Race to the Top Project 2 Draft Data Transfer System Requirements DRAFT, December 11, 2013.

Functional requirements are those that specify what the **system must be able to do, tasks it must be able to perform, and functionality it must provide**. The Data Transfer System must, at a minimum, provide:

Central data dictionary

The system must store the authoritative list of datasets that can be transferred through the system and make this list available for potential consumers. This data dictionary forms the foundation for conforming transferrable data around a common definition. Note that the definitions in this data dictionary may not match source data dictionaries.

- **Define a new dataset**

System administrators must be able to access an interface for defining a new dataset in the Data Dictionary. All of the data dictionary attributes need to be edited when defining the new dataset. The interface could also include a web service endpoint for creating new datasets programmatically.

At a minimum, a dataset should record:

- the name of the dataset
- a brief description
- information about the source of those data (e.g., the District SIS)
- the list of fields/elements included
- data type field definitions
- business rules for each element

- **Edit or delete an existing dataset**

Based on user roles, edit or delete an existing record.

- **View the data dictionary**

The data dictionary should be available in a human-readable version using HTML.

- **Expose data dictionary as a web service**

Expose a machine-readable version of the dictionary using XML and/or JSON.

Service registry

Other systems and service consumers must know what this system is capable of providing. Minimally, this should include the names and endpoint locations (or web addresses) of each service and resource. This could also include details about each service, available both machine - and human-readable.

- **View available services and resources**

An HTML version available for humans to browse.

- **Expose the registry as a web service**

A machine-readable version of the service registry using XML and/or JSON.

- **Use version numbers for each service**

Provide version numbers to users/systems so that if the interface changes, downstream systems do not try to make a request based on the definition of a different version of the interface.

- **Register a provider system**
Providers make data available for transfer.
- **Register a consumer system**
Consumers accept data. In many cases, the same system can be a provider and a consumer.
- **Track information capabilities of each provider and consumer (e.g., software in use)**
For each provider or consumer, the system must know the information capabilities in place in order to facilitate data flow and data translation, if needed. This information determines if data can be directly transferred, needs translation or cross-referencing, or cannot be transferred.

User identity and access management

Manage users and the methods for giving access, assigning permissions, and verifying identity.

- **Issue entity credentials (certificates, etc.) for end users**
Each entity with access to the system must be given credentials to access the system once permission is obtained. Consumers and providers belonging to the entity use these credentials to identify to the system and authenticate against. This requirement can be met in a number of ways, and should use industry best practices. A possible implementation could include X.509 certificates issued by a central certificate authority, or an entity access token.
- **Authorize an entity/organization's users to request a dataset**
See it in a list in the request manager.
- **Manage user credentials and role-based security**
Users who access the system must be able to authenticate to the system and authorize against a security broker that provides access to different components of the system based on an access-control list. The system should accommodate existing security structures in place at organizations. For example, Active Directory organizational units, Washington EDS roles, or SIS user permissions.
- **Use single sign-on for users to log in**
Users should not be required to create a new username and password to access the system. Single sign-on should be configured so that users can use existing credentials when accessing the system, such as a district user account.
- **Use two-factor authentication**
The system could also offer two-factor authentication for users to achieve a greater level of security. Certain roles might require this additional protection, such as system administrators or security managers.
- **Prevent shared user accounts and passwords**
Users and organizations must not be allowed to share a single account/password across multiple people. Besides the inherent security risks, shared usernames also make accurate auditing impossible. All user credentials should be administered in a way that prevents shared use.

Notifications

- **Automatically send emails for manual requests**
Any non-automated data transfers are facilitated by email, but still tracked in the system. Emails should have ways for users to report status back in the application interface.
- **Subscribe to activity notifications**
Users with access should get a notification when actions are taken related to certain entities or records.
- **Push notifications to trigger action**
Systems should push requests to other systems to facilitate real-time requests.

Non-functional/overall requirements

Non-functional requirements stipulate **how** the system should function as it performs the tasks described above.

- **Comply with applicable privacy laws ([FERPA](#), [HIPAA](#), [CIPA](#), [COPPA](#))**
These laws provide minimum privacy protections. The system will exceed these protections whenever possible.
- **Encryption end-to-end**
Data should never be moved unencrypted or stored unencrypted, or made available without encryption except for at the final endpoints.
- **System is always-available and considered mission-critical**
Use of the system will be integrated into district workflows and practice, so it must be reliable at all times. Limited system maintenance should be performed at pre-established times and downtime should be well-communicated to users in advance. The system should support automatic failover and load-balancing, if needed, to accommodate.
- **Comply with [FedRAMP](#) (public cloud standards)**
If any part of the system operates in a public cloud space, these federal guidelines must be followed.
- **No long-term dataset storage**
Data transferred through the system should not be stored long-term. This is not a data warehouse. Temporary caching and other performance-improvement tactics are reasonable. Data may also be temporarily stored locally while the system waits for large datasets to transfer, or to compile data from multiple providers so that data can be sent in a single transmission to a consumer.
- **Use real-time transfer (not delayed batch updates)**
Requests for data will always pull data directly from providers immediately when requested, and not from a daily batched version or other local infrequently updated storage. Providers may offer cached or batched data, however, if their systems cannot send real-time data directly from source systems.
- **Use nationally recognized data standard(s)**
Use nationally recognized standards, such as CEDS, SIF, or Ed-Fi, wherever feasible. This avoids “reinventing the wheel” for components that already have a foundation; makes the system more sustainable by building on tools that are supported by a larger group. This also

enables the system to interoperate with others around the state and country to impact more students should this be required of it in the future.

Appendix E: Data fields available from P2

Data set	Needed for CYSO?
Enrollment and Demographics	
Schedule	
FRPL	
Grade history	
Attributes and programs	
Limited English proficiency	
Special education programs	
Race and ethnicity	
Absences	
Discipline	
S1418 status	
State assessments	
504 Plan	
Teacher-student matching	
Student learning plan/Accelerated learning plan	
Parent language	
Non-state summative assessments	
CBO program participation	
CCSS subscale mastery	
Smarter Balanced interim assessments	
Smarter Balanced summative assessments	
ACT and AP test scores	
College Board scores	
College Bound Scholarship signup	
Absence counts	
Early warning indicators	
Immunization information	
Internship interest and history	
Assessments	
Early learning demographics	

Data set	Needed for CYSO?
Early learning enrollment	
Career exploration software accounts	
DreamBox account	
iExcel account	
ST-Math account	
GoalView profile	
IEP information not in CEDARS	
IEP Online profile	
Activity attendance and dosage	
College and career planning	
College entrance requirements (CADR's)	
Teacher transition notes	
ELL information not in CEDARS	
Extracurricular involvement	
Formative assessments	
Grade book data	
Career Cruising account	
Other software accounts	
4-year enrollment, persistence and completion	
CTC enrollment, persistence, remediation and completion	
Classroom-based Assessments	
Counselor/volunteer/mentor/staff notes	
Course-planning	
FAFSA signup and completion	
High school readiness	
Path to college checklist	
Ever FosterYouth	
Guardian name and contact info	
Parent highest education level and history	
Employment	
K–3 enrollment and performance	

Data set	Needed for CYSO?
Corrected CEDARS info	
Best accomplishments	
Learning preferences	
Motivations	
Portfolio of work	
21st century skills	

Appendix F: Non-recommended systems

During the course of this project, the team looked at scores of data systems initiatives of all kinds. This table lists all systems and the “bottom line” that governed their not continuing to be considered.

School Information Systems (SIS) such as Pearson School Systems/PowerSchool, Skyward/WSIPC, Illuminate, and Synergy contain many features specific to school reporting and analysis that are not relevant to the shared measurement initiative – such as automated state reporting functions and support for seating charts. For this reason, we did not consider any options in this category for this reason – other SIS Aeries SIS, Edupoint, Genius SIS, Pinnacle, Infinite Campus, JumpRope, Maestro SIS, Spiral Universe, and SunGard.

Typology of data systems that support YD/OST systems

System(s)	Reason not reviewed
Unicentric (Service Xpert Suite) –	website not updated since 2008
City-Based Systems (Providence, Boston, Louisville, New York City, Washington, DC, Denver, San Francisco) - Safe Harbors MIS, Seattle Youth Violence Prevention Initiative	<p>Oriented toward funder needs; some more comprehensive (e.g., Boston)</p> <p>Some (not all) linked to school district systems</p> <p>Most useful for grant management and resource allocation</p> <p>Research and analysis a secondary function</p> <p>Providers sometimes have trouble seeing the value</p> <p><i>Benefits:</i> Can be used to demonstrate value of programs through enrollment, attendance (quality), or impact (academic)</p> <p><i>Challenges:</i> Capacity, training, redundancies in data entry, data quality</p>
School District/Partnership-Based Systems (Cincinnati, Nashville) - Spokane Public Schools	<p>Emphasis is on linking of school and partner data</p> <p>Data is “owned” by the school district or partnership, but accessible to partners for service delivery</p> <p>Student-level outcomes combined with program-level data (and who is served in what way and when)</p> <p><i>Benefits:</i> Combines relevant student-level data in one place, informs targeting, service delivery, and evaluation</p> <p><i>Challenges:</i> Limited ability of partners to customize, analysis burden falls on the school/partnership, CYSO has limited capacity to implement (in terms of cost and positioning)</p>

System(s)	Reason not reviewed
CBO-Based Systems (Collaborative or Intermediary) - Regional case management database (in development)	<p><i>Benefits:</i> Supports service delivery, potential to align and refine practice, could be set up to communicate with a school, funder, and/or research system</p> <p><i>Challenges:</i> Sustainability, participation may be hard to incentivize and therefore low</p>
Research Institution-Based Systems - Partners for our Children, CCER data system (in development)	<p>Example: Youth Data Archive at Stanford's Gardner Center (San Mateo and San Francisco counties)</p> <p><i>Benefits:</i> Robust research capabilities, FERPA compliance, leveraging of university resources</p> <p><i>Challenges:</i> Little value for case management</p> <p>Focus on cross-agency and cross-sector analysis</p> <p>Use data to improve services, develop policies, and align funding</p>
Community TekKnowledge	<p>"CTK" manages two hosted services: Apricot and the Community Impact Online Data Manager (CI-ODM) that were just merged into a single platform in 2013, presenting risk and not a great match in terms of features.</p>

Appendix G: Sample staff job description for internal admin

External responsibilities

Overall, this person will be responsible for interactions with the vendor of the system as well as potentially other systems that need data from the database. Responsibilities include:

- Maintaining knowledge of new developments and features of the system
- Reviewing invoices and new products from vendor and conferring with leadership to determine best use of budgeted dollars
- Serving as liaison to other consumers of data from system/vendors

Ensuring database integrity

The internal admin is responsible for ensuring that the system and data is clean and that it meets any specific security requirements. Duties include:

- Conducting weekly/monthly audits of data entry to ensure accuracy
- Where possible, building in functionality/establishing security to prevent bad entry
- Providing users/CBOs with feedback on their data entry practices
- Maintaining users and security settings for the system
- Producing or supporting verified month and year-end reports

Maintaining efficient database and operations

The internal admin ensures that the database supports CYSO's strategies. The internal admin also is the point person for imports and integrations with other systems. Responsibilities include:

- Ensuring the database and operations support the strategies — "translating" goals and strategies into operations
- Managing all existing codes and tables; adding new ones as strategies dictate
- Periodically eliminating obsolete query, report, and export parameter settings
- Conducting all global changes and/or imports to maintain data
- Maintaining all integrations with other systems

Other responsibilities

Tasks might include:

- Managing/supporting CBO users responsible for providing data
- Designing and managing processing workflow, including roles and responsibilities of all involved
- Ensuring that data is produced within a specified timeframe

The internal admin is the go-to person for reports and outputs. They will ensure the quality of all lists and reports. Responsibilities include:

- Supporting production of standard and custom reports — determining which reports are needed regularly (monthly, weekly, etc.) and setting them up to allow self-service reporting

- Where needed, building custom reports for special projects
- Building queries and exports for complex purposes

Supporting users

Perhaps most importantly, the internal admin will support users, drive adoption, and provide ongoing training to ensure people use the system to its fullest capacity. Some of the tasks include:

- Providing ongoing assistance to users — encouraging use of vendor’s technical support, but when questions are dependent on knowledge of the organization’s specific configuration, support from the Internal admin is necessary
- Ensuring that policies and procedures documentation is current and accessible
- Preparing tip sheets for commonly asked questions
- Developing and delivering targeted training to current and new users

Appendix H: Communicating and reporting plan⁸

Program or initiative:							
The purpose of the program or initiative:							
Step 1: <i>Audiences (intended partners and users of program or initiative)</i>	Step 2: <i>For each audience listed, check the appropriate purposes for communicating with them.</i>			Step 3: <i>For each audience listed, check the appropriate purposes for communicating with them.</i>			Step 4: <i>Consider each audience. Prioritize each as HIGH, MED, LOW</i>
Audiences	During the Program/Initiative			Conclusion of Program/Initiative			Priority
	Include in design and implementation of program/initiative	Inform about upcoming activities	Keep informed about program/initiative progress	Inform about the program/initiative	Communicate to support change and/or improvement	Demonstrate accountability	
1.							
2.							
3.							
4.							
5.							
6.							

⁸ Adapted from: Torres, R. T., Preskill, H. & Piontek, M. (2005). *Evaluation strategies for communicating and reporting: Enhancing learning in organizations*. Thousand Oaks, CA: Sage.

List your audiences from Step #1	Audience Characteristics – Step #5						Step #6
	What is their reading ability and/or willingness to read shared measurement documentation?	How familiar are they with the program/initiative?	What is their attitude toward, or interest level in, the program/initiative?	What is their decision-making role re the program or initiative or measurement?	What is their familiarity with shared measurement in general?	What is their attitude toward, or interest level, in this shared measurement?	Implications for Content and Style of Communications
	High Mid Low Non-reader Don't know	Very familiar Somewhat familiar Not familiar Don't know	Positive/High Neutral Negative/Low Don't know	Crucial Important Minor No Role Don't know	Very familiar Somewhat familiar Not familiar Don't know	Positive/High Neutral Negative/Low Don't know	
1.							
2.							
3.							
4.							
5.							
6.							

Appendix I: Measure design and definition templates

measure design

begin with the end in mind	<ul style="list-style-type: none"> • [write down the result you want to measure] • [write what you want to create, not what you want to avoid] 																								
be sensory specific	<ul style="list-style-type: none"> • [what would people see, hear, feel or do if this outcome were actually happening?] • [avoid using inert language like “enhanced” or “effective” or “accountable” – use sensory rich language as it will be easier to design measures for] • [revise your list when you are done, to remove duplicates and to keep only the sensory statements that best collectively describe your result] 																								
find potential measures	<table border="1"> <thead> <tr> <th><i>potential measures</i></th><th><i>S</i></th><th><i>F</i></th></tr> </thead> <tbody> <tr> <td>1. [go back to the ‘be sensory specific’ section and list the things you could potentially physically count as evidence of the outcome]</td><td></td><td></td></tr> <tr> <td>2. [for each piece of evidence you list, rate its strength relative to your outcome, and its feasibility in being brought to life, as High, Medium or Low]</td><td></td><td></td></tr> <tr> <td>3.</td><td></td><td></td></tr> <tr> <td>4.</td><td></td><td></td></tr> <tr> <td>5.</td><td></td><td></td></tr> <tr> <td>6.</td><td></td><td></td></tr> <tr> <td>7. [to insert more rows, click your mouse outside of the right-hand end of the row ABOVE this one, and hit your enter key]</td><td></td><td></td></tr> </tbody> </table>	<i>potential measures</i>	<i>S</i>	<i>F</i>	1. [go back to the ‘be sensory specific’ section and list the things you could potentially physically count as evidence of the outcome]			2. [for each piece of evidence you list, rate its strength relative to your outcome, and its feasibility in being brought to life, as High, Medium or Low]			3.			4.			5.			6.			7. [to insert more rows, click your mouse outside of the right-hand end of the row ABOVE this one, and hit your enter key]		
<i>potential measures</i>	<i>S</i>	<i>F</i>																							
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2. [for each piece of evidence you list, rate its strength relative to your outcome, and its feasibility in being brought to life, as High, Medium or Low]																									
3.																									
4.																									
5.																									
6.																									
7. [to insert more rows, click your mouse outside of the right-hand end of the row ABOVE this one, and hit your enter key]																									
check the bigger picture	<ul style="list-style-type: none"> • [what could be the unintended consequences of achieving this outcome?] • [can you successfully prevent or manage these consequences, or do you need to revise your result/outcome?] 																								
name the measure(s)	<ul style="list-style-type: none"> • choose the measures above that rated highest for both strength and feasibility – aim for only 1, 2 or at most 3 measures • decide what to call the measure, being informative and succinct, and describe it in a sentence to make it’s meaning clear 																								

measure definition

name	[the name of your measure, from your measure design template]		
description	[the description of your measure, from your measure design template]		
intent	[the reason why you really need this measure, what you can't do without knowing it]		
where it fits	level:	[what level in the measure hierarchy e.g. strategic, tactical, operational]	
	result:	[which result from your results map was this measure designed for?]	
	measure relationships:	... is a of measure ...
		[cause-effect, companion, conflict]	[insert the name of the other measure this measure has strong relationships to]
			[to insert more rows, click your mouse outside of the right-hand end of the row ABOVE this one, and hit your enter key]
	process / department:	[which area in your organisation does this measure primarily relate to?]	
calculation	formula:	[describe exactly how your measure's values are to be calculated, specifically identifying each data item that is required in the calculation]	
	frequency:	[how frequently should your measure's values be calculated: daily, weekly, monthly, quarterly,...?]	
	scope:	[are there any specific inclusions or exclusions from your measure?]	
	data items:	data item name	description
			source/availability
		[to insert more rows, click your mouse outside of the right-hand end of the row ABOVE this one, and hit your enter key]	
presentation	comparison type:	[trend over time, point to point over time, element to element, correlation, ranking]	
	presentation method:	[choose a chart type that best displays the comparison type you need]	
	frequency:	[will your measure be presented to its audience with the same frequency as calculation, or less frequently?]	
response	[list each signal your measure could possible give you e.g. improvement, deterioration, no change, met target, and describe your response to each signal]		
owner(s)	performance owner(s)	[who is responsible for tracking this measure, interpreting it's signals, and initiating action in response to those signals?]	
	data owner(s)	[who is responsible for ensuring the data is provided for this measure?]	
notes	[anything else important to document about this measure?]		