# Where's the data?
# Data Working Groups, Document Management Systems, and Consistent Reporting of Impacts

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## ABSTRACT

Access to information is important to the successful operation of any organization. It is one area most organizations are continually working on, taking advantage of new technology developments that allow for better and more practical access to information.

Wisconsin's Focus on Energy program, a public-private partnership between the state and the independent firms delivering the component programs, has presented some great opportunities but also some significant challenges, not the least of which is providing access to information. The Focus team includes the Wisconsin Department of Administration, four program administrators (each with multiple subcontractors), and several additional contractors, primarily a marketing contractor, an evaluation contractor and a compliance contractor. Each of these organizations is generating information that is needed by the other organizations on the Focus team.

Three initiatives have been undertaken by Focus in an effort to address the issues related to providing access to information: 1) the creation of data work groups, 2) the design of a centralized document management system, and 3) the implementation of a centralized data warehouse to facilitate analysis of financial and operation data. This paper will discuss the purpose of these initiatives, identify the issues encountered in implementing them, and provide an overview of the benefits and costs of those efforts and a summary of their current status.


## Introduction

Focus on Energy (Focus) is a public–private partnership offering energy information and services to residential, business, agricultural, and industrial customers throughout Wisconsin. These services are delivered by a group of firms contracted by the Wisconsin Department of Administration's Division of Energy. Focus is funded by the Utility Public Benefits fund created by the Wisconsin State Legislature in 1999 as part of the Reliability 2000 initiative.

Access to information is important to the successful operation of any organization. It is one area that most organizations are continually improving, taking advantage of new technology developments that makes access to information more possible and practical than before. The challenges faced by Focus in providing access to information are significant, given that Focus is made up of a partnership between government and private organizations. At the head of Focus is the state government agency, the Wisconsin Department of Administration, Division of Energy (WDOA). WDOA Division of Energy staff administer the low-income energy assistance and weatherization programs, while three independent firms administer the remaining four major program areas: Wisconsin Energy Efficiency Corporation (WECC) administers the Residential and Renewable Energy Programs; Milwaukee School of Engineering (MSOE) administers the Business Programs; and the Energy Center of Wisconsin administers Environmental Research. Each of these program administrators retains numerous (at least five and as many as thirty) sub-contractors. In addition, a number of firms are involved in administering functions that cut across programs. For example, Hoffman-York manages marketing for Focus, PA

Government Services is providing evaluation services, and Virchow-Krause is administering the compliance function. Many of these companies also retain multiple sub-contractors. For example, PA Government Services heads a 10-firm team of evaluation subcontractors.

Each organization is generating information that is important to other Focus organizations for the successful completion of their role (contract management, program administration, program evaluation, compliance, marketing). The information being generated comes in many forms, most commonly as reports, memos, spreadsheets, or databases. Other forms include audio files, video files, and published documents such as program applications, brochures, fact sheets, and survey instruments.

Three initiatives have been undertaken by Focus in an effort to address the issues related to providing access to information: 1) the creation of data work groups, 2) the design of a centralized document management system, and 3) the implementation of a centralized data warehouse to facilitate analysis of financial and operation data. This paper will discuss the purpose of these initiatives, the issues encountered in implementing them, and provide an overview of the benefits and costs of those efforts, and a summary of their current status.

## Data Work Groups

The purpose of the work groups is to provide a forum for communicating data issues and establishing data requirements and processes for sharing of data. Data work groups were established within a few months of the Focus programs getting up and running. Working cooperatively with program administrators and other staff, WDOA established data work groups for each program area (Business, Residential, and Renewable Energy Programs). The groups are composed of representatives from WDOA, the program-area administrators, and the program-area evaluators. Representatives can be either data-oriented staff and/or program-oriented staff, depending on the issues under discussion.

The evaluation of Focus is multi-faceted, including process evaluation, energy impacts evaluation, market effects evaluation, and evaluation of performance against program metrics/goals. There are also a number of crosscutting evaluation efforts, including marketing evaluation, valuation of non-energy benefits (environmental, economic, and other non-energy benefits), and benefit/cost analysis. For each of these evaluation efforts, different types of data are needed, there are different perspectives on the same data, and needs for the level of detail or granularity of the data vary. In preparation for the initial work group meetings the evaluators identified 9 major data categories for discussion; 1) participants, 2) program allies, 3) measures, 4) education and training, 5) marketing, 6) goals and metrics, 7) market research, 8) reports, and 9) budget.

The initial work group meetings were large, including multiple participants from each of the parties, and focused on these nine data categories: the scope of the data needs; communication about existing systems and processes; and the establishment of contacts, lines of communication, and roles. Subsequently, many of the data issues have been handled in smaller meetings, and even through less formal communications that have not always included a representative from all parties.

The participants, program allies, and measures data categories are the most data intensive and have been the primary focus of the data work groups. Obviously they are also the most important for documenting the efforts of the program administrators and critical to the evaluation team for most of their evaluation efforts, especially the evaluation of energy impacts. Processes were put in place for providing this information to the evaluation team on a regular basis. Currently, the Residential and Renewable Energy Programs administrator provides their entire program tracking data each quarter in prelude to a quarterly evaluation report that contains gross, verified gross and net energy impacts for Focus. The same administrator also responds to specific data requests as needed. The Business Programs administrator has provided evaluators with a replicate of their database, which is synchronized weekly and posted to the document management system (DMS) that can be accessed by the evaluation team.

Education and Training also has multiple sources of information, including the subcontractor who has provided much of the education and training for Focus, as well as education and training activities being provided by the program administrators themselves. A process has been established to obtain the information on education and training events provided by the subcontractor. This process includes the provision of a list of past and planned education and training events, a database of training participants, and electronic copies of materials used in the events conducted by these subcontracts. However, there are also education and training events that are being conducted by the program administrators themselves. Like the marketing activities of the program administrators, this information is not tracked in any consistent way, and without making a special request, there is no way to "drill-down" to better understand who the program administrators have provided education and training to, or to analyze relationships between education and training and participation in other facets of Focus.

The Focus marketing contractor maintains an Excel spreadsheet that provides a list of all of the past and planned centralized marketing efforts. However, there are a number of marketing activities that are conducted by the program administrators that are not documented in that spreadsheet. This makes it difficult to get the full picture of all of the marketing activities taking place. There is also no tracking of the marketing message recipients. The marketing category has been a low priority for the data work groups and there has been no effort to address the issues raised.

Program goals and metrics are part of the program administrators' contracts. Performance against these goals is reported in the program administrators' monthly reports. Many of these goals are "bean counting" (i.e., "number of contractors recruited as program allies" and "number of facility managers attending training").

Market research activities are tracked in a database maintained by the evaluation team. This is primarily due to the need for a process to communicate this information to the utilities so that their customer service operations are able to verify the validity of research efforts to customers. A report of all current and upcoming research projects is sent to utility representatives on the third Friday of every month. On the second Friday of each month, the report is sent to all Focus market research contacts, requesting that they provide updates/corrections/additions before the report goes out.

Reports are posted to the document management system. For the evaluation team, they are posted within 24 hours of being submitted as deliverables to WDOA, with one person responsible for posting those documents along with their required descriptions. Others have established different processes, but typically have one or two persons with responsibility for posting reports to the site.

Budget data is provided largely through the invoices submitted to WDOA. The evaluation team receives copies of these invoices after they are submitted. Though it is not being done this way currently, these invoices should be posted to the intranet. Since there is not a high level of detail required on the invoices, the evaluation team also receives from the Business Programs a more detailed spreadsheet that corresponds to the invoice submitted to WDOA, but has more detailed information. Residential and Renewable Energy programs do not provide any greater level of detail on the breakout of subcontractor expenditures since they do not maintain the information in their accounting system. Through meetings of the data work groups, it was determined that this level of detail would not be required from the program administrator. As an alternative, at the end of the first program year the largest subcontractors completed a spreadsheet that allocated their costs for the previous year into the desired categories.

## Issues Related to Data Work Groups

The data work groups have struggled with two issues: data documentation and the perceived burden of data requests.

Data documentation (meta-data) has been a significant issue and is still outstanding. The lack of good documentation makes it more difficult and time consuming to analyze the data and increases the potential of introducing error into the analysis. While everyone has agreed on the importance of good data documentation, in practice it continues to be assigned a very low priority. This is partially due to the fact that the data tracking systems have continued to evolve and the resources have gone into system development at the expense of system documentation.

Program administrators often feel that data requirements are too burdensome already and may balk at specific data requests. If the evaluation team or WDOA believe that it is important for that information to be tracked and provided by the program administrators and if the data work group is unable to negotiate an agreement on the request, there is a process for resolution that was outlined as part of the creation of the data work groups. The process involves escalating the issue to senior staff at DOA. This has not yet been necessary, although there have been a number of differences that have had to be negotiated or tabled. One example of the kinds of differences encountered was briefly discussed above with regard to the level of detail provided for expenditures of subcontractors. Another example is related to a request for appliance sales data. The residential program administrator is collecting sales data on washing machines from participating retailers. The evaluation lead requested that they ask participating retailers to provide sales data on additional appliances. The program administrator felt this would place too much burden on the participating retailers. The evaluation team ultimately agreed to pursue sales information through alternative sources.

**Benefits of Data Work Groups**

The benefits of establishing the data work groups have been many:

- Provide an established process for resolving data issues,
- Highlight the importance of tracking information and ensures that appropriate resources are given to that task,
- Facilitate evaluation planning,
- Improve communication on data issues between WDOA, program administrators, and evaluators,
- Increase the understanding of perspectives of other parties,
- Centralize data requests, reducing the impact of requests on program administrators (for the same information from multiple parties), and
- Establish processes for sharing information in the early stages of the program to ensure that data will be there when it is needed,

**Costs of Data Work Groups**

- Considerable staff time has been expended in meetings with multiple parties to discuss data issues.

**Current Status of the Data Work Groups**

The data work groups had an initial flurry of activity when they were formed to establish expectations and communicate information on the existing systems and basic data requirements. Now that everyone has an understanding of the data needs, the majority of data requests are currently handled on an ad hoc basis rather than through the formal data work group meetings. However, formal meetings will continue to take place to address major program changes and to focus on unresolved data issues such as the tracking of marketing and education and training information. The data work groups will also play a significant role as requirements for the data warehouse are being developed.

## Document Management System

The second initiative undertaken by Focus to address the issues related to providing access to information was the design of a document management system (DMS). The goal of the document management system (DMS) is to provide a user-friendly system for storage and retrieval of all Focus documents that could be accessed by the entire Focus team. The early methods for sharing documents were primarily via e-mail on an ad-hoc basis. In addition, the Business Programs administrator created a system for making documents available via the Internet using Microsoft Outlook, and the evaluation team developed a custom, web-based DMS. The web-based DMS was a no-frills application, focusing on function that used Microsoft Access as the database for storage of the document information. This web-based DMS was designed for approximately $15,000. The administrators for the Residential and Renewable Energy programs have not developed a system accessible to anyone not on their team, although they began to use the evaluation team site for posting documents that they felt needed wider distribution.

When Focus began development of their internet/intranet site towards the end of the first program year, it was decided that a DMS should be a key part of the intranet, and that it would replace the DMS being maintained by the evaluation team. When the intranet was nearing completion, the documents from the evaluation DMS were imported into the DMS on the Focus intranet. This document management system has some similarities to the system provided by CALMAC at www.calmac.org. While the CALMAC site is designed for the evaluation community and only houses evaluation reports, the Focus document management system is available on an intranet accessible only by the Focus team and is designed to include documents from program administrators, DOA and the evaluation team.

### Issues Related to the Document Management System

There were three key issues related to development of a DMS, 1) what should be posted there, 2) what is the best process for getting documents posted, and 3) how to ensure that the established processes are followed.

What should be posted on the DMS? A DMS can store any electronic file including Word processing documents, spreadsheets, databases, pictures, sound, and video. One strategy would be to use the DMS like a shared server for the Focus team, with all documents created as part of work on Focus stored there. On the other end of the spectrum, the DMS could only be used for storage of formal reports. Formal guidelines regarding what should be posted have not yet been established for the Focus DMS. The table below presents the nine data categories that were used to frame the discussion for the data work groups and discusses for each data category, what types of documents might be relevant for the DMS.

**Table 1.**

| Data Categories | Types of Documents |
|---|---|
| Participants | This type of data will be stored in the data warehouse and not in the DMS. |
| Program Allies | |
| Measures | |
| Education and Training | Education and training materials (e.g., training handbooks). |

| Data Categories | Types of Documents |
|---|---|
| Marketing | Brochures, fact sheets, radio spots, television spots, print advertising. |
| Goals and Metrics | The goals and metrics are part of the program administrators' contracts, which reside in the DMS. They are also in the data warehouse for program tracking. |
| Market Research | Survey data, codebooks, questionnaires, research reports. |
| Reports | Administrators' monthly reports, meeting minutes, evaluation reports, and memorandums. This data category is the most straightforward with all reports being submitted to the DMS. |
| Financial | The financial information stored on the DMS includes program budgets and invoices to DOA. With the development of the data warehouse, it may not be necessary to maintain invoices on the DMS. |

What is the process for getting documents posted? Once it is clear what documents should be posted, it is important to identify the person responsible for posting these documents. Establishing a centralized system where there are only a few persons who have responsibility for posting documents has the advantage of ensuring some consistency in the way documents are posted (i.e. the level of detail included in the document description). It also helps to ensure the completeness of the information entered with the document and makes it easier to ensure that the established processes are followed since it keeps the number of responsible parties to a minimum. The downside of a centralized approach is that the person may not be familiar enough with the various documents to easily provide a description. To address this issue, forms have been developed for submitting documents to the "Librarian" to be posted; however, it has been difficult to get people to fill out the form.

How do you ensure that the established processes are followed? Creating a DMS and establishing processes for use of the system do not ensure that the system will be used. Barriers to using the system include lack of buy-in because the team members do not see the value of the system, lack of time, lack of understanding of the system, lack of understanding of the established processes, lack of training, and poor system design that makes it difficult to use. These barriers need to be overcome. It is important that the process establishes responsibility and accountability for posting documents to the system so that if there is a breakdown in the process, the accountable party can be identified and appropriate measures taken to correct the problem. There is also a need for an ongoing review of what is posted to ensure that it is categorized consistently with other documents that have been posted.

**Benefits of the Document Management System**

A DMS has many benefits, including:

- Ensuring that the information is available when needed,
- Having all documents in one place,
- Ability to organize documents so they can be easily found,
- Minimizing "compartmentalization" of information, and
- Maximizing access to information.

**Costs of the Document Management System**

- System development (one-time)
- System maintenance (ongoing)
- Need for a Librarian
- User training.

**Current Status of the Document Management System**

The DMS has been developed as part of the Focus intranet, which can be accessed by anyone on the Focus team. Some budget issues have prevented completion of the intranet and as a result the DMS has not yet been "rolled out." Key personnel from each team do have access to the system and are posting documents. Some additional budget dollars have been allocated recently for work to fix some of the more significant bugs in the system. Once that work is completed, the DMS will be introduced to the Focus team, and training will be provided on accessing and submitting documents.

## Data Warehouse

The third initiative undertaken by Focus in an effort to address the issues related to providing access to information was the development of a data warehouse. The objective of the data warehouse is to leverage information management technology to automate much of the tracking and reporting of the fiscal and operational performance of Focus. The data warehouse currently being developed has three components: 1) a financial management component for storing information on budgets and contractor spending, 2) an operations component for storing information about the energy efficient equipment and services provided by program administrators, and 3) a Geographic Information Systems component that provides for reporting of program impacts by geographic region, i.e. county, utility territory and senate and assembly districts.

DOA currently uses manual and ad hoc computer systems that were designed, often by the contract managers, to support the administration of much smaller grant programs. While the DOA systems support overall financial analysis, they are not designed to track financial or program-data-related transactions at the administrator or subcontractor level, which are key to the understanding and oversight of Focus. As applied to the much larger and more complex Public Benefits program, the current manual and ad hoc processes are redundant, cumbersome and contribute to inefficient use of DOA and contractor resources. They also do not provide sufficient information to assure the ratepayer that all expenses are appropriate.

The program administrators' tracking systems are very different, using different approaches and terminology, and capturing different pieces of information. Providing a centralized data repository will require program administrators to provide information in a more consistent manner and will also protect DOA's vested interest in the data. This also makes it easier to change administrators or contractors if necessary without major disruptions to reporting systems.

The following table describes the types of data that will be stored in the data warehouse for each of the nine data categories.

**Table 2.**

| Data Categories | Types of Data |
|---|---|
| Participants | Businesses, organizations or residences that have received services through Focus |
| Program Allies | Trade allies who have provided services through Focus |
| Measures | Energy efficiency equipment or processes that have been recommended and/or installed in a participants' facility or home, including information about project costs and grants/incentives |
| Education and Training | Information on education and training events and participation in these events |
| Marketing | Information on marketing activities and persons receiving marketing materials |
| Goals and Metrics | Information on goals and metrics used for reporting of performance against metrics |
| Market Research | Tracking of market research participants |
| Reports | This is stored in the DMS |
| Financial | All financial information (e.g., budgets, program/contractor spending, incentives, grants paid) |

## Issues Related to the Data Warehouse

There were numerous issues that needed to be resolved prior to the development of the data warehouse:

- What fields will be "required";
- Ensuring that the data warehouse will have minimal impact on existing systems of program administrators;
- Developing business logic for reporting;
- Ensuring the system is flexible enough to handle changes to Focus structure and programs;
- Security;
- Administration:
- Establishing processes; and
- Data confidentiality.

## Benefits of the Data Warehouse

A data warehouse offers many benefits to Focus. It:

- Saves significant staff time currently required to obtain information from various sources and manually collate it for reporting and analysis;
- Captures valuable data that is difficult and costly (or impossible) to collect after the fact;
- Allows for analyses that were not possible before, and for existing analyses to be conducted in less time with a higher degree of accuracy, with some of it completely automated;
- Improves the quality of information available for program administration, contract management and evaluation by ensuring that critical data elements are available for analysis;

- Saves time and effort required to re-build information after the fact using inferior sources (i.e. hard copy documents); and
- Provides access to “real-time” data that will increase the effectiveness of the entire Focus staff (DOA, program administrators, evaluation, compliance agent).

**Costs of the Data Warehouse**

- Hardware costs are relatively minor.
- Software costs are significant (includes Microsoft Server OS, SQL Server, Sagent (for geocoding data), ESRI mapping applications, an off-the-shelf accounting package, possibly an off-the-shelf business intelligence (BI) application, all tied together with a significant level of custom application development.
- Staff time is required as follows. A Focus Data Warehouse work group has been established with representatives from DOA and each of the contractors to DOA. The work group developed an RFP, and is currently reviewing proposals (the review team included many of the work group members along with additional personnel from some other state agencies).
- Maintenance and operation costs must also be considered.

**Current Status of the Data Warehouse**

Proposals submitted in response to an RFP are currently being reviewed. Some number of the companies that submitted proposals will be asked to participate in a Best and Final process where they will be asked to demonstrate prototypes of their proposed solution. A contract will be awarded by the end of May 2003, with the selected company expected to be on board and ready to start work by mid-June.