

# Maintaining data quality in support of measurement

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In an organization as large as The Correctional Services of Canada (CSC), research must provide the foundation for organizational change and influence the progression, development and delivery of CSC services that address the myriad of regional/national issues. At the most general level, applied research in corrections should strive to gather systematic quantitative knowledge supporting qualitative analysis, that is readily applicable and useful, and from which maximum benefit can be derived for improvements in correctional policy and practice.<sup>2</sup>

## Background

The ideal situation to facilitate research within CSC would be to have a repository of information that would be accessed for analysis purposes only. Ideally this repository would contain the sum of all historical and current information relevant to the identified area of research or study. Current research within CSC is completed through the extraction of corporate data from one or more sources and at times may require reworking or modification due to changes in policy or business practices that may not be reflected in the current data set.

## What is data quality?

Data quality is a measurement of the accuracy, timeliness, relevance and consistency of data that exists within an enterprise.<sup>3</sup> In the context of this article, data is a symbol or other representation of some fact about some thing. It is the raw material from which information is derived and is the basis for intelligent decisions and actions. Information, is data in context, it has been given meaning.<sup>4</sup> It is this information that is vital to an enterprise in its daily operations. Poor data, results in poor information which, in turn, can lead to poor decision making. For CSC this equation has direct impact on our ability to do business as well provide accurate information to stakeholders.

CSC uses a number of electronic information gathering applications; foremost in this group is the Offender Management System (OMS). It is a prime example of a corporate electronic system which facilitates the tasks of gathering, storing, reporting and analyzing information. Fundamental to these

activities, however, is the user; anyone who is actively involved in entering information into OMS has a role to play in data quality.

## Why is it important?

CSC exists as one element of a large and complex criminal justice system. The emergence of the Integrated Justice Information initiative, through which elements of the criminal justice system are to be linked to create the Canadian Public Safety Information Network, emphasizes CSC's responsibility to produce high-quality information for the use of others. Data quality is essential to ensure that CSC can do its part.<sup>5</sup>

A fundamental role of CSC is the timely processing of information to allow for appropriate decision making relative to offender reintegration. In essence the business of CSC is the reception, assessment, treatment and reintegration of federal offenders. To facilitate this process, CSC is required to collect and analyze an abundance of information on each individual entering our system. This information is stored as data which then becomes the source of information used for various activities such as correctional planning, risk assessments, progress measurement, performance measurement and research.

CSC has a very real responsibility to the general public and to our clients to assure it is *contributing to the protection of society by actively encouraging and assisting offenders to become law-abiding citizens, while exercising reasonable, safe, secure and humane control.*<sup>6</sup> In order to do this, CSC must be able to provide the quality of information required to make accurate and appropriate decisions. Further to our Mission, CSC is driven by legislation that requires, by law, the administration of specific activities within specified timeframes. These activities can only be demonstrated or measured if they have been recorded electronically.

## What is the potential impact?

CSC is not unique in its practice of storing huge amounts of information for the purpose of decision making. The difference might be that the impact of poor data quality in our environment could be one

of public safety rather than on profits or inventory as might be the case for other large corporations. With this in mind it is important to stress that anyone involved in entering information into a system that might be retrieved at a later date for decision-making purposes plays a part in the management of data quality.

Data quality impacts all levels of any agency dependant on information produced from within. In every case, individuals entering information into any type of electronic system must be aware of the importance and potential impact of that information. An error or omission in recording a specific detail or activity can have long-standing ramifications if the error is not noticed. Data extractors, corporate reporting tools and audit systems have some level of ability to capture data errors in a system but are not completely reliable and can only be used to look for predictable errors such as a blank entry where there should be one or spelling as well as date errors.

However, contextual information is extremely hard to measure from a data perspective. Written assessments, analysis or narratives depend on the accuracy of the information being entered as well as the attentiveness of the individual entering it. Errors in grammar and diction are problematic, but of more concern, is inaccurate or erroneous information that when reviewed by a third party can be misleading or in some cases completely false.

### How can it be achieved?

Data quality does not simply happen; it is the result of a shift in both thinking and practice within an organization both at the management as well as the individual level. Ownership of responsibility and accountability on the part of anyone actively involved in recording data or information into any of our corporate and non-corporate reporting systems is the cornerstone to an environment which will consistently produce accurate and dependable information.

The process of improving data quality in an organization begins with increasing the level of awareness. Individuals involved in recording information must have clear and concise direction on the content, purpose and scope of the information they are expected to record. Users must understand what type of information they are required to collect, why they are recording it, where it is stored, how it might be used in the future, who owns it and how long it will be retained. Any form of training or

orientation should incorporate information that increases the individual's understanding of the impact of their activities as well as providing easy access to any legislation, policies or corporate directions referencing the role of information gathering and recording.

In the context of CSC, all employees are stewards of the assets of the organization, including the asset known as information. As "stewards", each person or position in the organization has specific accountabilities for the quality of the information in the system. These "stewardship" accountabilities must become a part of performance assessment criteria throughout the organization. There must be accountability on the part of the data provider.<sup>7</sup>

Finally, by increasing the level of awareness and accountability for information quality within an organization there is a demonstrated commitment to both the staff and the final product. In the end this will influence the level of commitment of the individual to the process of improving information quality within the organization.

### The final product

A successful application of a data quality management process, within an organization, will increase the efficacy of the data used in research and reporting at the corporate level as well as the confidence of the audience, towards the information produced. CSC is required to demonstrate how it is meeting its legislated requirements at a number of different levels. In order to properly demonstrate our progress CSC must be able to measure it. Accurately measuring the activities of CSC requires a dependence on corporate data that must be timely, accurate and valid. Improving the data quality environment directly improves CSC's ability to perform these tasks. ■

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<sup>2</sup> See [http://www.csc-scc.gc.ca/text/rsrch/reports/r05/ro5e\\_e.shtml](http://www.csc-scc.gc.ca/text/rsrch/reports/r05/ro5e_e.shtml), Research Program 2003–2004 for more comprehensive information.

<sup>3</sup> See <http://www.it-director.com/article.php?articleid=1327> 2003/10/07

<sup>4</sup> See [http://infonet-omsr/pdfdocuments/tqdm\\_document\\_final\\_e.doc](http://infonet-omsr/pdfdocuments/tqdm_document_final_e.doc) 2003/11/03

<sup>5</sup> See [http://infonet-omsr/pdfdocuments/tqdm\\_document\\_final\\_e.doc](http://infonet-omsr/pdfdocuments/tqdm_document_final_e.doc) 2003/11/03

<sup>6</sup> See [http://www.csc-scc.gc.ca/text/pblct/mission/index\\_e.shtml#M\\_stat](http://www.csc-scc.gc.ca/text/pblct/mission/index_e.shtml#M_stat) 2003/10/27

<sup>7</sup> See [http://infonet-omsr/pdfdocuments/tqdm\\_document\\_final\\_e.doc](http://infonet-omsr/pdfdocuments/tqdm_document_final_e.doc) 2003/11/03