

# **Government Spatial Information Activity Pilot Survey 1999-2000**

## **Executive Summary**

**Office of Economic and Statistical Research  
July 2001**

All responses were collected under the Government's Statistical Returns Act (1896) which means that penalties would apply under the laws of Queensland for anyone who releases any responses which would identify individual respondents. Accordingly, the respondent agencies to the survey are not identified in this report.

## **Background**

This project aimed to develop metrics for the measurement of the value of production and use of spatial information in Government.

A better understanding of appropriate metrics for spatial information activity would allow:

- more accurate assessment of the impact on the current economy;
- means to identify potential for export growth in the industry;
- government agencies to consider spatial information initiatives as part of their corporate strategic plan; and
- a more informed base to assist policy on business principles for government operating in the spatial information supply chain.

The project was to deliver to Queensland Spatial Information Infrastructure Council (QSIIC) a framework for collecting metrics for the spatial information industry. The Government Spatial Information Activity Pilot Survey project was conducted by the Office of Economic and Statistical Research for QSIIC.

The aim of this report is to provide an overview of the process and results of the project. As the project was a pilot, the report focuses mainly on the process.

## **The results**

The pilot survey was limited to 12 government agencies, six of which were Government departments, three were government-owned corporations and three were local governments. They were asked to provide responses in relation to databases or activities with a significant spatial component. One government department responded that it did not have databases within the scope of the survey and one government-owned corporation was unable to reply in the timeframe.

There were two survey forms, Part A containing whole of agency questions and Part B which sought data about activities with a significant spatial component.

Part A aimed to provide information at the corporate level for the agency. The agencies responded by either –

1. Able to provide all required data (2 respondents in this category);
2. Able to provide nearly all data (2 respondents in this category);
3. Found it difficult to complete the form and did their best (5 respondents in this category); and
4. Not able to complete the form (1 respondent in this category).

Part B was to be completed for each database or activity that the respondents identified as having a “critical” spatial information component. The agencies responded by either –

1. Able to report separately on each identified database (4 respondents in this category);
2. Not able to report separately on each identified database (4 respondents in this category);
3. Reported data in one Form B for databases that are incorporated into a network system (2 respondents in this category); and
4. Not able to participate in the pilot survey (1 respondent in this category).

The project produced data from those agencies which were able to respond in the time frame. As the sample of respondents surveyed was biased towards agencies with reasonably known involvement in spatial information activity, the data may be unrepresentative. These data indicate that:

- 29 databases with significant spatial elements were identified in the agencies which responded;
- 752.9 full-time equivalent officers were engaged in spatial activities and a further 2250 were identified as substantial users of spatial databases;
- \$17.2m was spent on the spatial databases in 1999/2000, which represented less than 0.5% of the agencies' expenditure. Most of these supplies were from Queensland; and
- \$6.7m in revenue was received for spatial activities related to these databases, a large portion of which came from commercialised units of local government.

Form A data was used for the calculation of percentage of agency activity which is spatial, in terms of staff numbers, expenditure and revenue. A full-scale survey would deliver the distribution of spatial activity for agencies.

## Conclusions and recommendations

The context of the spatial information activity as defined by the survey needs to be better understood by respondents if data collections are to provide consistent results. Respondents have different levels of understanding of spatial activity. The definition needs to focus on the specific spatial activities which are above and beyond general information activities, if we are to assess the additional impact to the economy of spatial information activity.

**Recommendation:** The QSIIC Communication Strategy include material clarifying what the “spatial information activity” comprises, in a way which facilitates and is consistent with the collection of data about the activity.

Generally, financial data are not readily available in the detailed formats sought. Agencies do not have reporting systems which allow for disaggregation of data into some key categories. Questions on revenue and expenditure often end up with financial staff who do not have detailed understanding of spatial activity and thus lack the ability to segment total figures.

**Recommendation:** Undertake further analysis of the possible sources of financial and personnel data about spatial activities, in consultation with officers with intimate knowledge of the operations of their spatial activity.

Some agencies reported multiple databases as one activity while other agencies reported each database separately. This made comparisons of data about individual databases or activities meaningless, as like was not being compared with like. The alternative is to take an “integrated systems” or “whole of agency approach” to the way we collect data on spatial information activities within an agency. This means that respondents would only be asked to provide data about the integrated system or whole of agency activity, which would simplify reporting by agencies, particularly where the same staff work on many databases or activities.

**Recommendation:** The unit of reporting of subsequent surveys should be on an agency's total suite of spatial activities.

The pilot survey did not provide much time for respondents, with a range of public holidays, other commitments, officers changing positions and restructuring of departments occurring during the collection period. Also, agencies are organised in various ways in relation to spatial activities. Some have a single budget which spans an area of work which is all spatial, other areas have a budget group within which not all activity is spatial, and in other cases, there are regional components of a spatial activity which are outside the respondent's area of immediate influence. The respondent needs to be able to draw on a number of people including finance/budget, GIS manager and regional officers to complete the returns.

**Recommendations:**

- Engage respondents in developing their in-house collection strategy and sign off on it; and
- Give respondents adequate time to implement their strategy.

Responding to the survey required a substantial investment of time from agencies. The high level of commitment to the project on the part of the respondents was critical to the level of success. The key contacts for the pilot survey were selected as those involved in the spatial information area and/or members of spatial information organisations. It is expected that the pilot process went more smoothly than might be expected from a general widespread survey. Another factor to consider is possible delays because required information may not be readily available. It may also be useful to consider discussing and working out possible alternative processes with less committed survey participants.

**Recommendations: –**

- Put emphasis on developing commitment to the project, involve senior management and set up workshops/meet face to face with some or all agencies;
- Develop the questionnaires with a sample of respondents prior to conducting survey to get their ideas on workable strategies;
- Invite some of potential respondents into the project team and work through together; and
- Set achievable timeframes for all respondents.

The staffing data provided useful information on numbers of officers involved in spatial activities. The broad classes of activity of staff appear useful, except that the users of data should be separated from the producers, noting that some folk will be both producers and users. A rule will be required to apportion a person's activities across these categories. It may also be useful to propose a short classification of the occupations of users, including statistician, policy analyst, planner, surveyor and others. This could inform about the value adding activities. The occupation of the producers may also help to identify which of the industry classification groups is a substantial contributor to spatial activity, such as ANZSIC 7822 Surveying services.

The users captured by the pilot were the in-house users. There maybe some value in considering the potential to obtain information of the external users.

**Recommendation:** Consider collecting occupations as a means to further understand producers and users of spatial products.

The categories of items of expenditure identified the substantial labour component in spatial activity costs and clarified the balance between current and capital. Notionally the capital expenditure should inform us of the investment in the activity.

To estimate the net contribution of government production of spatial activity to the Queensland economy, we will need the expenditure and revenue figures separately for Queensland, interstate and overseas. These data were not readily available and there was some lack of clarity about the appropriate treatment of the purchase of overseas inputs from a local supplier.

**Recommendation:** Discussions be held with agencies about means to identify overseas and interstate revenue and expenditure.

The major part of the revenue data captured in this pilot survey was from service agreements between a local government and its privatised corporations.

**Recommendation:** The treatment of this needs further discussion.

The custodial practices questions were included in the survey as an interest rather than directly in relation to the economic contribution of spatial activities. It indicates that more can be done in some areas, such as charters, to improve the flow of spatial information.

There is no data in the survey which identifies areas within the activity which show potential export or other earnings.

**Recommendation:** Consider a question for respondents to identify areas of export potential, particularly if surveying private sector.

## Overall

Traditional industry classifications are not a good framework for measuring the contribution of spatial information activity to an economy, because spatial activity is an input into many other activities undertaken by government and private businesses in the state. For example, a Geographic Information System for emergency services substantially improves the efficiency and effectiveness of the delivery of emergency services to the people of Queensland. However, quantifying the improvements in efficiency or effectiveness may be better done on a case study basis for individual services. It may be difficult to add all the benefits together to arrive at an overall efficiency measure of spatial information activity.

Spatial information about Queensland is only applied within Queensland for a range of government and business purposes. That is, while systems may be sold, the spatial data relates only to activity within Queensland. Therefore, exports from spatial information activity would relate only to the systems which may have application in other states or countries.

To assess the impact of government spatial information activity on the Queensland economy, the key measures for government activity should be:

- government expenditure on spatial information activity as a proportion of total expenditure;

- employment in the production and use of spatial information, as a proportion of total government employment; and
- government revenues from spatial information activity as a proportion of receipts for goods and services.

Similar measures would apply if assessing the impact of spatial information activity in the private sector.

It is clear that agencies or businesses consuming spatial information products need to fully understand spatial information activity and its contributions to the efficiencies in the production of other outputs. They would then need to be able to derive estimates of the above measures for the full effect of the spatial information activity to be estimated.

For producers of spatial information products, the production of these measures will be simpler. For example, the Department of Innovation and Information Economy's *Queensland Communication and Information Industry Survey 1999/2000* provided data on employment, revenues and exports.

**Recommendations:**

- a pilot survey be undertaken of Queensland businesses which produce spatial information products to assess their readiness to provide data on the key measures. This could be achieved as additional questions to the Department of Innovation and Information Economy's *Queensland Communication and Information Industry Survey* if it is repeated; and
- a full survey of the production of spatial information data and products in Queensland government sector, focussing on the measures above be completed with improved methodologies as recommended.