Using supply chain management principles to build relationships with clients

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Abstract. NSW Department of Primary Industries (NSW DPI) has responded to robust evaluation information and included the principles of supply chain management into a state-wide communication strategy. Based on this, strategic relationships with our primary clients and staff has improved and improved their capacity to achieve good weed management outcomes for NSW. Historically, NSW DPI has a strong role in providing information resources to assist local government in the implementation of the *NSW Noxious Weeds Act 1993.* In 2004, NSW DPI conducted a client needs analysis to identify the barriers for NSW DPI staff in producing publications, the perception of our external clients to our current information resources and the issues associated with accessing them efficiently. The findings allowed NSW DPI to develop a range of systems, processes and services to better meet the needs of our staff and clients, improve our performance in knowledge management and provide a clear evaluation of the outcomes achieved by our capacity building programs to our funding body.

Key words: supply chain, information resources, building client trust, knowledge management

Introduction

It is well known that rapid technological changes and increased community expectations have driven reform in the NSW government to deliver innovative and valuable services, increased efficiencies and better outcomes for clients (Kruk and Bastaja 2002).

Government agencies are also being driven to greater levels of strategic planning and evaluation to guide the investment of resources and provide improved accountability and outcomes in service delivery (Kruk & Bastaja, 2002).

This has been reflected in the NSW Department of Primary Industries Strategic Plan (NSW DPI 2007a) and by the development of the NSW Invasive Species Plan (NSW DPI b 2007). Both documents provide clear performance indicators to challenge NSW DPI in their role and function in knowledge management and building the capacity of their clients.

NSW DPI is the lead agency for weed management in NSW and has partnered with local government in the management of noxious weeds for over 100 years. This relationship will continue to be important into the future as local government and NSW DPI remain key stakeholders in implementing the *NSW Noxious Weed Act 1993* and the NSW Invasive Species Plan.

A recent survey conducted by the Local Government and Shires Association of NSW highlighted that in NSW over 90 per cent of councils undertake noxious and environmental weed management in their environmental management programs. The same survey also showed that 66 per cent of councils surveyed indicated they require information and knowledge services to build their capacity to better manage their natural resources (LGSA 2008).

NSW DPI has developed a statewide communication strategy with components to build the capacity of key clients like local government, meet their needs in information delivery and meet NSW DPI's responsibility for undertaking effective and efficient knowledge management processes (McCaffery and Schembri 2007).

In 2004, NSW DPI conducted a Client Needs Analysis (McCaffery and Naughton 2004) to identify the issues that led to the decline of its position as the lead provider of weed information in NSW. The study identified a range of impediments in the systems and processes used bv NSW DPI staff to produce information resources. It also highlighted the negative perception of NSW DPI's external clients to the current information resources and the issues associated with accessing them efficiently.

When analysed it was evident that the development and delivery of information resources to clients relied on implementing good supply chain and knowledge management principles.

Achieving good weed management outcomes for NSW depends on the relationship between NSW DPI in providing information and knowledge services and key clients in utilising them. Therefore, a range of appropriate management initiatives have been developed and implemented to improve the supply chain and NSW DPI's knowledge management function.

The initiatives are designed to:

- allow a greater client focus
- allow greater accountability for the expenditure of public funding
- allow measurement against departmental and state performance indicators
- initiate more effective information exchange systems
- improve relationships with key client groups and establish NSW DPI again as the lead agency in weed information.

Background

Historically, NSW DPI has a strong role in providing information resources to assist local government in the implementation of the *NSW Noxious Weeds Act 1993.* However, the outcomes of a Client Needs Analysis in 2004 indicated that NSW DPI's role in information delivery had been reduced over time and the existing partnership had become eroded.

The main issues of concern were:

- NSW DPI staff were not motivated to produce information resources because of the slow internal processes of refereeing, editing and design and their own lack of time. The Weed Management Unit (WMU) relied on other NSW DPI staff to provide the technical knowledge for the development of information resources. Their unwillingness to participate in the process had major implications for the production of new resources to meet client needs and the on-going review and update of current resources.
- Clients indicated that NSW DPI weed publications did not always meet their needs. As a consequence they looked elsewhere for information resources leading to a decline in the uptake of NSW DPI resources and reducing the return on investment to produce the resources.
- Clients indicated that they did not know what information resources were available and often they did not know where to get them from. Again, this led to a decline in the uptake of NSW DPI resources, reducing the return on investment to produce the resources.
- Clients indicated that they did not trust the NSW DPI system to provide printed copies when they were required. This resulted in stockpiling of resources for future use, often when the resources were outdated. This had significant implications for risk management within the knowledge management framework for NSW DPI. By default weeds information resources are rated as 'medium risk' as they often include herbicide and legislative information which can quickly become outdated. The distribution of resources that includes outdated information of this type can be misleading to land managers and have serious legal implications.

NSW DPI has implemented the following initiatives to overcome these issues and improve its knowledge management function and client satisfaction.

A quality management system for the development and production of information resources

Quality management is a phenomenon that has been widely talked about and embraced by companies since the 1970's (Murray 2009). NSW DPI uses this approach to improve the quality of information resources, improve the performance of staff and maintain a client focus.

The quality management system provides a mechanism to overcome the issues identified by NSW DPI staff during the Clients Needs Analysis and an internal review of publishing conducted by the NSW DPI Publishing Branch in 2006. The issues identified included time delays and version control during the development process and outdated information in current resources.

The quality management system has several fully integrated components including a:

- cross-unit publications liaison committee
- set of publishing procedures and guidelines for authors of weeds resources
- record management system for each information resource
- record management system for ongoing knowledge management of information resources generally.

The cross-unit publications committee reviews and prioritises the development and production of current and future information resources to ensure resources are meeting a client need and are achieving outcomes for the community of NSW. It provides a forum for other units with key technical staff to provide input into the process, facilitate partnerships within NSW DPI and avoid duplication.

The publishing procedures and guidelines assist NSW DPI staff in developing useful and timely resources. The procedures provide a framework based on client consultation for the types of

information that should be included plus a range of other important considerations in weed information (e.g. legalities involved with herbicide information).

The record management system for each resource utilises the existing NSW DPI record management system (TRIM). It provides a simple system for managing resources by reducing the problems with version control when multiple authors are involved and allows the future update of resources by NSW DPI staff in a time efficient way. All resources being developed have a TRIM container established and the word version of the final document is lodged into the container. Following this, the editor and designer access the same file so the final version published is retained as a word document as well as a design file. This allows easy access by staff for reviewing and modification in the future.

This system is also linked to the NSW DPI archiving and job management systems for publishing so the reprint of existing resources is now more time efficient.

The record management system for ongoing knowledge management of resources has also been established in TRIM to monitor the review process of publications and allow the efficient management of time sensitive information. In the past, weed information resources were often not current because of a lack of overall knowledge management processes.

Central repository of resources

To overcome clients being unaware of how to access resources NSW DPI established a central repository for all weed information resources and a comprehensive catalogue.

In the past, individual officers developed resources and then stored them in their own office or storeroom. This meant that the storage and ongoing management of resources was highly decentralised and the effective promotion of resources was almost impossible.

The current system of storage and distribution utilises the NSW DPI Bookshop which has a suitable storage facility and established processes for the time efficient packaging and delivery of resources to clients.

This new arrangement has also been built into the publishing procedures for weed information resources to facilitate better management, promotion and distribution of NSW DPI resources.

Inventory management system

Inventory turnover can provide an accurate indicator of success in meeting clients needs (Schreibfeder 2009). Managing inventory is also a key principle of supply chain management (Murray 2009).

Like all organisations NSW DPI is required to be accountable for the use of external funding and need to undertake continual strategic planning to improve its systems and services. This system allows the capture of important evaluation and planning information on the distribution of weed information resources. With cutbacks to government spending, evaluation of resources and service needs is critical to maintain the support from external funding sources.

For clients to have trust in the publication delivery system, inventory is monitored and the information used to trigger the necessary processes of review and reprint through the quality management system. The other advantage of inventory management is the option to print smaller quantities of resources. This minimises the commitment of limited financial resources to unused stock and reduces the risk of resources becoming outdated before they are distributed.

The Weed Resource Bulletin

Promotion is one of the four P's of effective marketing (Kotler et al 1994). It could be said that there is no point having all the components of the supply chain working together to provide a better service to clients if promotion does not occur. To overcome the lack of knowledge of the resources available to clients NSW DPI has established the Weed Resource Bulletin as a promotional tool.

The Weed Resource Bulletin is a free subscription service for those interested in keeping up to date with available weed information. When a resource becomes available an email or post bulletin is issued to subscribers alerting them to its availability, providing a link to it on the NSW DPI website and a catalogue/order form for acquiring printed copies.

In the past, clients were sent a supply of publications as a courtesy with many of them being discarded, never used or distributed when they were no longer current. This service provides a mechanism in the supply chain for clients to determine their own information needs and be self-sufficient in acquiring the resources needed to support their individual weed management programs.

The uptake of the service and feedback from clients has been very positive with subscriptions continuing to increase to now include several interstate and overseas clients.

Discussion

Most of the new systems and processes are still in the infancy stage. However, preliminary evaluation has been undertaken and the results are promising.

One NSW DPI editor involved in the implementation of the new quality management system estimates that the process is now reducing the development time of publications by up to 33 per cent.

The evaluation information captured by the new systems on publication distribution demonstrates that the use of NSW DPI resources by key clients in NSW has increased as the new processes for acquiring information resources become familiar. Figure 1 shows the distribution information since the central repository, inventory management system and Weed Resource Bulletin were established.

Figure 1. The distribution of NSW DPI weed resources since the initiation of the new quality management and distribution processes.
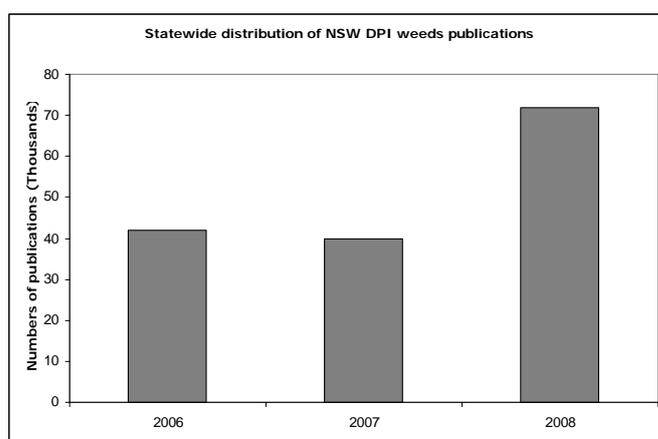
NSW DPI Bookshop staff have reported a steady increase in the number of repeat orders from the same clients since the service was established. Table 1 provides an example of the typical patterns of use of the service by our clients. The regular re-ordering of small numbers of the same resource indicates a trust in NSW DPI being able to provide resources on demand and the resultant decrease in the stockpiling of publications that occurred in the past.

**Table 1. Example of the usage of NSW DPI services by Lake Macquarie Council.**

Date	Order type	Number of publications ordered	Examples of publications reordered
24 April 2008	New order	1453	N/A
28 October 2008	New and repeat order	499	10 anchored water hyacinth Weed Alert 10 weedy sporobolus grasses Best Practice Manual
6 May 2009	New order	22	N/A
20 May 2009	New and repeat order	737	10 anchored water hyacinth Weed Alert 5 weedy sporobolus grasses Best Practice Manual 10 crofton weed Primefacts 5 Weeds Attack CD
28 May 2009	New and repeat order	83	10 crofton weed Primefacts 10 Weeds Attack CD

New order - publications that have not been ordered previously.

Repeat order – publications that have been ordered previously.

The uptake of subscriptions to the Weed Resource Bulletin has risen steadily since its launch in 2005 (Figure 2). To date there have only been two requests to unsubscribe to the service by people who were no longer in the weed management profession. The subscription level has currently attained a 95 per cent subscription rate for local government in NSW. Despite this, the service still continues to attract new subscribers as 'word of mouth' promotion occurs with other key client groups.

Figure 2. The growth in subscribers since the launch of the Weed Resource Bulletin service.
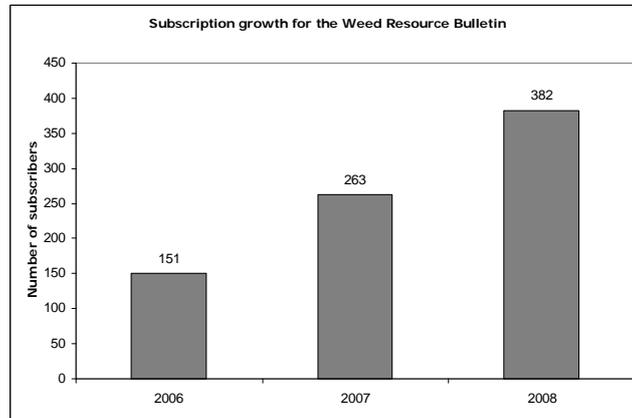
The Weed Resource Bulletin continues to achieve the results it was initiated for with Figure 3 demonstrating an example of how a bulletin impacts on the distribution of new information resources. The bulletin alert for the revised leafy elodea Weed Alert was issued in August 2008. Figure 3 shows a peak in the numbers distributed following the alert.

Figure 3. The distribution pattern for the leafy elodea Weed Alert. Note the peak following the bulletin to alert subscribers to the newly revised version of the resource.
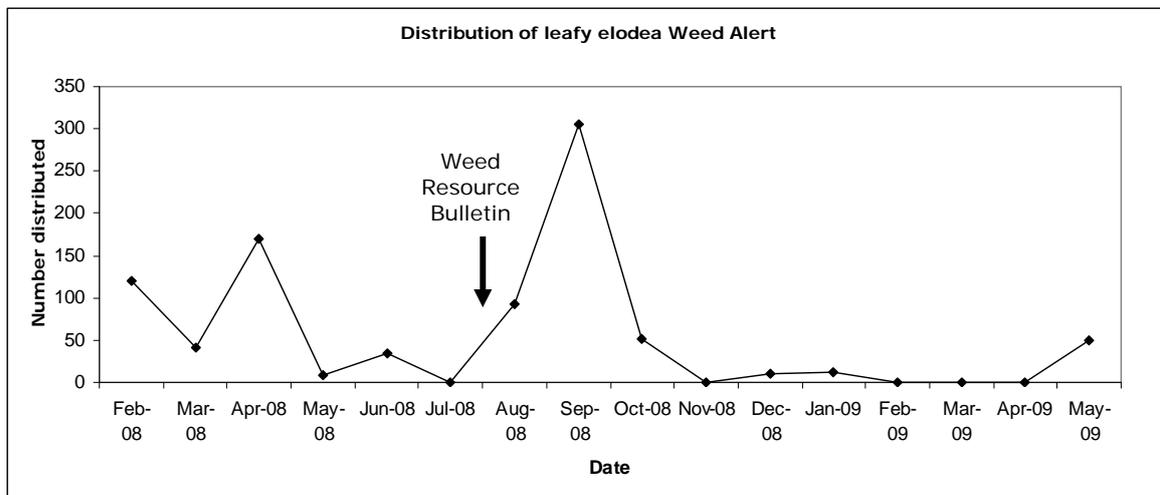
Conclusion

Information and knowledge management systems and services and efficient information delivery will continue to be important in the future to support and facilitate good environmental management in NSW.

NSW DPI is confident from the evaluation that developing and implementing supply chain and knowledge management processes has improved the relationship NSW DPI has with key client groups.

These concepts will continue to be critical in the development and delivery of information resources and will remain a focus of NSW DPI in future planning of capacity building programs in weed management.

Acknowledgements

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