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Government business process analysis with activity theory

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Abstract

Activity Theory tells us that a motivated person or group performs an activity directed at an object in order to transform the object into desired outcomes to fulfil a need. It also tells us that instruments and the community mediate human activity. The New South Wales state parliament in Australia performs the activity of creating Acts and those Acts prescribe within them the objects of the Act and the desired outcomes. To achieve the desired outcomes, the Act will establish or constitute the necessary instruments. This paper describes an application of Yrjo Engestrom's Activity Theory model, or structure of human activity, to Parts 1,2 and 3 of the New South Wales "Waste Minimisation And Management Act", with the focus being on Part 3. The object of this application is to identify in the Act the prescribed mandatory core, mandatory non-core and mandatory supporting business processes of the Waste Board, an instrument constituted in Part 3 to administer that part of the Act.

Keywords

activity, theory, analysis, government, process, business

Disciplines

Business | Social and Behavioral Sciences

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"Government Business Process Analysis with Activity Theory"

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ABSTRACT

Activity Theory tells us that a motivated person or group performs an activity directed at an object in order to transform the object into desired outcomes to fulfil a need. It also tells us that instruments and the community mediate human activity. The New South Wales state parliament in Australia performs the activity of creating Acts and those Acts prescribe within them the objects of the Act and the desired outcomes. To achieve the desired outcomes, the Act will establish or constitute the necessary instruments. This paper describes an application of Yrjö Engeström's Activity Theory model, or structure of human activity, to Parts 1, 2 and 3 of the New South Wales "Waste Minimisation And Management Act", with the focus being on Part 3. The object of this application is to identify in the Act the prescribed mandatory core, mandatory non-core and mandatory supporting business processes of the Waste Board, an instrument constituted in Part 3 to administer that part of the Act.

Keywords: Process Modelling, Activity Theory, Government Processes, Core Processes, Support Processes, Mandatory Processes and Narrative Analysis

1. INTRODUCTION

People within government organisations use information systems to assist them in the performance of their work. From an Activity Theory perspective the information system is an instrument that mediates the activities within the activity system, that is, the information system mediates the work within the organisation. When analysing, modelling and documenting an organisation's business processes and their supporting information systems we need a starting point and structure. For government organisations the starting point is the legislation, or Act, that constituted the organisation.

Acts of parliament are structured being divided into parts and sections. Parts are numbered sequentially from the beginning of the Act and a Part will contain one or many sections. Sections are also numbered sequentially from the beginning of the Act. The numbering of sections and parts are not related to each other.

Narrative analysis allows the decomposition of the contents of an Act but the decomposition must be structured so meaningful information can be obtained. To give structure we need a framework. Activity Theory gives us a framework that allows us to identify roles, the functions performed by those roles, the objects of those functions and their desired outcomes. It also identifies some of the constraints, or rules, placed on those functions. Activity theory also assists in the identification of which of those functions are the core business processes.

2. ACTIVITY THEORY

Lev Vygotsky, a Russian psychologist and literature scholar, formulated Activity Theory (AT), during the first decades of the 20th century. Vygotsky stated that cultural means or artefacts, the basic types of which are signs and tools, mediated human activity directed at an object [1]. The object is a thing, which the human has focused his or her attention on, the object being tangible or intangible. The activity's transformation of the object into outcomes will be mediated by the use of instruments, including both tools and signs [2]. An activity can have unanticipated outcomes that may or may not be desired. A. N. Leontiev, a student of Vygotsky, developed Activity Theory further and showed activity is also socially mediated [3]. Further work by Engeström and others [1] [4] extended the meaning of social mediation and showed that the unit of analysis when studying human mediated activity is the activity system, that is, a community of humans who have a common object of activity. Engeström found that social mediation is marked by rules and division of labour mediating the interaction between people in the activity system. Rules are laws, policies, standards, ethical issues, strategies, norms and community and individual values and beliefs. From an organisational perspective, the division of labour describes differences and relationships between the various work roles, their power, authority and responsibility within the horizontal organisational hierarchy and its vertical layers. Figure 1 is Engeström's Figure 2.6 "The structure of human activity" from Engeström 1987, which is also called the Activity Theory model.

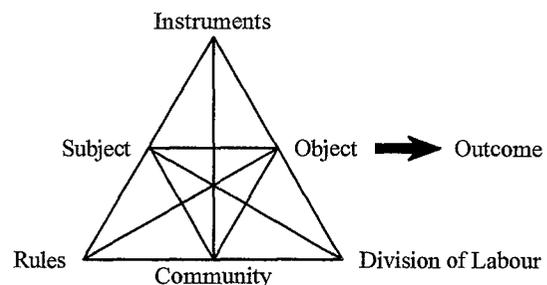


Figure 1: Engeström's structure of human activity [1]

3. ACT ANALYSIS

Most business process analysis and modelling techniques are top down. The top for a government organisation is the Act that constituted the organisation. The New South Wales (NSW) "Waste Minimisation And Management Act" [5], which will be referred to as the Act, constituted Waste Boards through the state of NSW in Australia. The first three parts of the Act are: Part 1 Preliminary (Sections 1 to 5); Part 2 State waste planning and policy (Sections 6 to 8); and Part 3 Regional waste planning

and management Division 1 Preliminary (Sections 9 to 29). In the following section, the narrative of Parts 1, 2 and 3 will be analysed and the AT model will be used as a framework to illustrate the analysis.

Part 1

In Part 1 Preliminary, Section 3 prescribes the principles and objects of the Act. The principles can be viewed as the Act's desired outcomes. The underlying principles of the Act, Section 3(1), are: (a) to achieve by the end of 2000 a 60% reduction in the amount of waste disposed of in New South Wales (being a per capita reduction, based on 1990 disposal rates), and (b) to establish a waste management hierarchy of the following order: avoidance; re-use; recycling and reprocessing; disposal.

The objects of the Act, prescribed in Section 3(2), are (a) to ensure that local government, industry and community representatives are involved in the development of State wide waste policy, (b) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the re-use and recycling of waste, (c) to ensure that industry shares with the community the responsibility for minimising and managing waste, (e) to promote and ensure the efficient resourcing of waste service planning and delivery, (f) to achieve integrated waste planning and services on a regional basis, (g) to promote and ensure environmentally responsible transporting, reprocessing and handling of waste, (h) to provide appropriate sanctions for unlawful waste disposal, in accordance with the principles of ecologically sustainable development contained in section 6 (2) of the Protection of the Environment Administration Act 1991..

Figure 2 shows the Minister as the subject responsible for the Act's implementation and its outcomes. The Act is the instrument being used by the Minister to transform the objects of the Act (Section 3(2)) to the Parliament's desired outcomes (Section 2(1)). The "Waste Minimisation And Management Act" must work with and is constrained by other Acts of Parliament. The Act is an output from the Parliament for all the citizens of New South Wales.

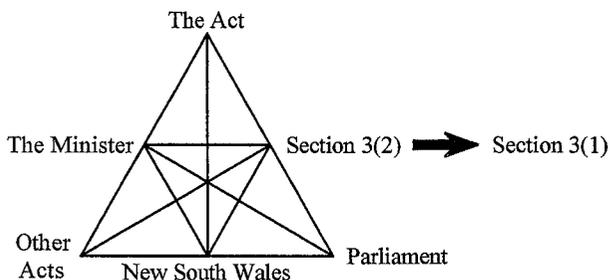


Figure 2: The AT components of the Act's implementation

Part 2

The object of Part 2, prescribed in Section 6, is "to ensure that all relevant interests are represented in the making and implementation of State waste planning and policy". The instrument established by Part 2 is the State Waste Advisory Council (SWAC), which will consist of 9 members appointed by the Minister. The functions of SWAC, prescribed in Section 8, are:

(1) The primary function of SWAC is to advise the Minister and the Environment Protection Authority (EPA) on the following matters:

- (a) waste reduction priorities,
 - (b) changes to legislation relating to waste,
 - (c) State wide waste reduction programs and the implementation of those programs,
 - (d) research and development priorities in waste management,
 - (e) preparation, content and approval of regional waste plans,
 - (f) funding of waste reduction programs,
 - (g) nominating industries for industry waste reduction plans (IWRPs),
 - (h) the preparation, scope, negotiation, approval and review of IWRPs.
- (2) SWAC may give advice to the Minister or the EPA whether or not the advice was requested.
 - (3) SWAC may advise the Minister:
 - (a) on the appropriate sanctions to be imposed on industry members and Waste Boards for failing to achieve waste reduction and other targets required under this Act, and
 - (b) on the waste streams that may be subject to disposal bans or restrictions under this Act.
 - (4) SWAC may advise the Minister or the EPA on such other matters relating to waste as it thinks appropriate or as may be requested by the Minister or the EPA from time to time.
 - (5) In exercising its functions under this Act, SWAC is to have regard to the principles of ecologically sustainable development contained in section 6 (2) of the Protection of the Environment Administration Act 1991.
 - (6) SWAC may, on at least one occasion each year, invite public submissions on matters relating to waste management.
 - (7) SWAC is required to prepare a report each year. Such a report is to refer to any public submissions received under subsection (6) and be made available to the public.
 - (8) The first such annual report must identify priorities for action and any areas where improved performance is required.

Desired outcomes of Part 2, though not explicitly defined as underlying principles, are broadly to give advice and reports to the Minister and the EPA. The advice and reports will be used in the formulation of policy, which the minister will take to the government's executive, the cabinet [6]. From there it may flow into amending existing legislation or the creation of new legislation.

In Part 2 SWAC was established as the instrument to mediate the gathering and presentation of advice and reports. The functions prescribed in Section 8 can be viewed as the AT activities needed to be performed by SWAC on the objects, prescribed in Section 6, to achieve the desired outcomes of Part 2. These functions can also be viewed as SWAC's business processes. As SWAC is a state organisation, its community would be all the citizens of NSW. Figure 3 shows the AT model components for SWAC.

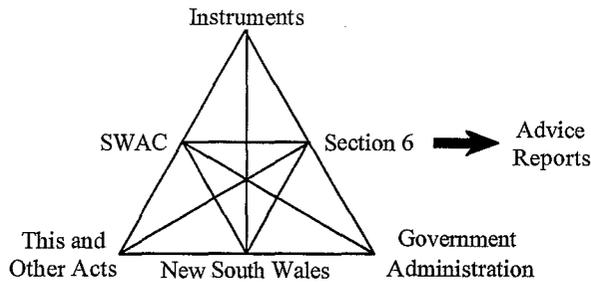


Figure 3: The AT components of SWAC's activities.

Part 3

The business processes of the Waste Board, an instrument constituted in Part 3, are the research area of focus for this paper. The objects of Part 3, prescribed in Section 9, are (a) to provide for an integrated approach to the assessment and planning of waste management, and (b) to ensure that waste planning and management is undertaken on an efficient and cost-effective scale, and (c) to ensure that regional waste management activities reflect State wide waste policy.

Section 10 in Part 3 identifies a community by prescribing Waste Management Regions, which are made up of "any 2 or more whole local government areas" or by declaring "the whole of any local government area to be included in a waste management region." For each Waste Management Region the Act constitutes a Waste Board. There are directorships created to manage the affairs of each Waste Board. The directors are the general manager of the Waste Board and no more than 12 other persons appointed by the Minister.

The objectives of a Waste Board, prescribed in Section 17, are:

- (a) to co-ordinate the waste services provided in and for the Waste Board's waste management region, and
- (b) to ensure that the constituent councils adopt efficient waste management practices and policies, and
- (c) to operate in accordance with the principles of ecologically sustainable development contained in section 6 (2) of the Protection of the Environment Administration Act 1991.

The desired outcomes of Part 3 are the underlying principles of the Act prescribed in Part 1 Section 3(1).

Section 18 prescribes the functions of Waste Boards but not all the functions are listed here.

- (1) The functions of a Waste Board are as follows:
 - (a) to establish management and charging policies for the waste services provided by the constituent councils,
 - (b) to enter into arrangements for carrying out waste services and recycling services in respect of the waste generated in its waste management region,
 - (c) to enter into arrangements for the recycling of waste,
 - (d) to develop handling, sorting and waste management principles for waste generators in its waste management region,
 - (e) to charge fees for any of the services provided by the Waste Board,
 - (f) to enter into arrangements with any person for the performance of services, or for the supply of goods,

plant, machinery or material, with respect to the exercise by the Waste Board of its functions.

- (2) A Waste Board may require contributions from constituent councils in its waste management region to finance the Waste Board's arrangements and initiatives. Any such contribution payable by a council to a Waste Board becomes, if it is not paid as directed by the Waste Board, a debt due to the Waste Board that is recoverable in any court of competent jurisdiction.
 - (3) A Waste Board has such other functions as may be conferred or imposed on it by or under this or any other Act.
- 19(1) A Waste Board is required to prepare and implement a plan for the waste management region for which it is constituted (a regional waste plan).
- 20(1) A Waste Board must, at least once each year, submit a report to the Minister on the implementation of its regional waste plan.

The Act also establishes the role of General Manager of a Waste Board who:

- (a) has the function of exercising the day-to-day management of the Waste Board, and
- (b) is subject to the control and direction of the directors, and
- (c) has such other functions as may be conferred or imposed by or under this or any other Act.

It can be seen in sub-part (b) that the General Manager is an instrument "subject to the control and direction of the directors" of the Waste Board to exercise "day-to-day management of the Waste Board" and any "other functions as may be conferred or imposed by or under this or any other Act." Figure 4 shows the AT model components for the Waste Board.

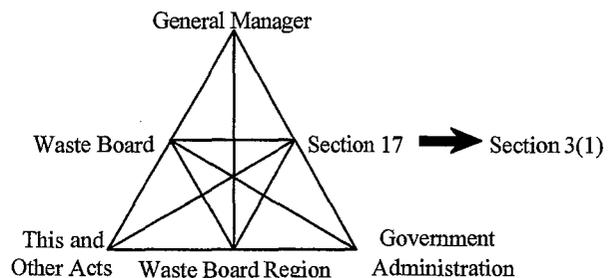


Figure 4: The AT components of SWAC's activities.

Work is a human activity system. SWAC and the Waste Boards perform activities (functions) to achieve common objectives. When the objectives have been achieved the activity will have been completed except that most of activities identified prescribed in the Act are ongoing or are performed annually. This also describes a business process. Having found the activities we have also found the organisation's business processes. Therefore, after the AT components for SWAC, Waste Boards and General Manager have been identified business process analysis can be performed.

4. BUSINESS PROCESSES

All organisations, including government organisations, have core business processes, or core competencies [7], and support business processes. However, government organisations have mandatory business processes. Mandatory

business processes may be core, non-core or support business processes. The functions “conferred or imposed by or under ... any other Act” upon the Waste Board and its General Manager are the Waste Board’s mandatory non-core business processes. Indeed, private organisations are also subject to some of these Acts, for example, the Occupational Health and Safety Act in NSW. Those functions “conferred or imposed by or under this Act” are the mandatory business processes, which are either core or support business processes. To determine if a function is a core or support business process, the objectives of the Part are examined. Those functions related to the objectives of the Part are the mandatory core business processes, whereas those that cannot be related are the mandatory support business processes. In the case of the Waste Board, the functions prescribed in sections 18(1e), 18(1f) and 18(2) cannot be clearly related to the Waste Board’s objectives of Part 3 and would be mandatory support business processes. Section 18(3) is a provision for the future and did not prescribe any functions at the time of proclamation.

The summarised Waste Board’s core business processes (functions/activities) in respect of its waste management region are therefore to:

- Establish management and charging policies for the waste services provided by the constituent councils,
- Enter into arrangements for carrying out waste services
- Enter into arrangements for carrying out recycling services
- Enter into arrangements for the recycling of waste
- Develop handling, sorting and waste management principles
- Prepare and implement a regional waste plan
- Submit an annual report to the Minister on the implementation of its regional waste plan

Once this initial analysis of the organisation's constituting Act has been completed, the actual processes within the organisation in question can be analysed to see how well they match those prescribed in the Act. If there is a significant mismatch, it may mean advice needs to be given to the Minister to have the Act amended, to reflect the change in society since the Act was proclaimed. However, it may also mean the organisation is not fulfilling all the obligations placed on it by its constituting Act.

The Waste Board General Manager has the “function of exercising the day-to-day management of the Waste Board” and to do this, he or she enters “into arrangements with any person for the performance of services, or for the supply of goods, plant, machinery or material, with respect to the exercise by the Waste Board of its functions”. In other words, the General Manager is responsible for the day-to-day functions, and uses human and other resources to mediate the Waste Board’s functions, or core business processes. The community would predominately be Waste Board staff and contractors, but would also include people from outside the Waste Board, so from an Activity Theory perspective the community would be the Waste Board Region. Figure 5 shows the AT model components for the General Manager.

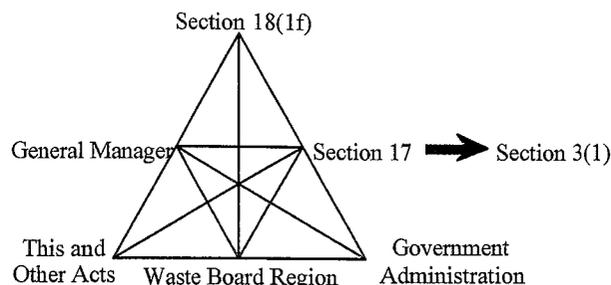


Figure 5: The AT components of General Manager’s activities.

5. CONCLUSIONS

Activity Theory gives us the Activity Theory model, which can be used as a framework to analyse a government organisation’s constituting Act. We can identify the activity systems, the subjects within the activity systems, their common object of activity and the instruments established or constituted to mediate the activities. We can also identify the community the activity system exists within and some of the rules that mediate the activities. Having identified the activity system’s activities we have identified the government organisation’s mandatory business processes. Once the mandatory core business processes have been identified further analyses can be carried out to analyse, model and document these business processes.

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