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Blending diverse community capability for regional development: the case of an e-commerce initiative for local indigenous artists

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Keywords
ECommerce, IIndigenous Artists, Community development, Activity Theory

Disciplines
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Blending Diverse Community Capability For Regional Development: The Case Of An E-Commerce Initiative For Local Indigenous Artists

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Abstract:

Regional communities often encompass the variety of skills and knowledge needed to take advantage of the Internet in order to open up their products and services to the global market place. They can, however, lack the foresight to identify opportunities to bring this diverse capability together and then manage it to carry out projects to successful outcomes. This paper presents a case where economic and technical expertise from a regional university has joined with exceptional artists, working in a struggling local indigenous community, to conduct a project to develop an e-commerce website both to sell their art-works and to promote their rich local culture. Cultural-Historical Activity Theory has been adopted to underpin a study of this project as it provides a multifaceted, holistic and dynamic framework for analysis and presentation of the findings. In this case of participatory research, *activity* is a suitable unit of analysis where the project team is a *collective subject* composed of individuals who bring different skills and understandings to bear on a *common object*, the e-commerce site. In addition to the commercial outcomes, this endeavour has provided intangible benefits in business know-how to the indigenous community. It .also provides a place for them to publish their cultural heritage and is a demonstrable example of engagement in regional welfare for the university.

Introduction

The potential of the Internet as a mechanism for promoting growth in remote regional and rural areas has been highlighted for many years. It is seen as a means of providing local employment and halting the 'brain drain', particularly of young people seeking work in already overpopulated cities (Delong, et al., 2002). One interesting community experience is the European 'Booktowns' network (Skogseid & Jansen 2001). This was a project aimed at revitalising small and old rural villages, threatened by economic decline, by establishing a network of bookshops. The idea of the 'Booktowns' network first arose in the 1960s when one successful small Welsh rural village successfully established a small business to sell second-hand and antiquarian books, which was copied by others all over Europe. More recently, several of these stores combined to establish an ICT- based organisational network for cooperation between both the bookshops and the Booktowns. These authors describe the project as an example of a 'regional innovation system' (Skogseid & Jansen 2001). That is not to say that there is anything particularly novel in individual elements of the system, such as the technology or business processes. These authors claim, however, that there is collective innovation in the complex, interactive set of activities involving knowledge development and diffusion where individuals and enterprises are highly dependent on their ability to come in contact and cooperate with other individuals and enterprises, who have similar or complementary needs and skills.

In Australia, internet technologies are being developed as solutions to the 'tyranny of distance' traditionally associated with regional and rural areas of this large continent and progress has been made in areas of e-learning, e-health, e-government and e-banking. Despite this, there is evidence of a 'digital divide' (Curtin 2001) in access to, and use of, the Internet among disadvantaged groups such as regional and indigenous

communities, even in developed countries such as Australia. Research has also shown that, to date, small business has lagged well behind big business in its uptake of E-commerce (MacGregor, et al., 2002). This should change with increases in general levels of computer literacy, improvements to national communications infrastructure and widely available, easer-to-use e-commerce applications. Regional communities may now encompass the variety of skills and knowledge needed to take advantage of the Internet to open up their products and services to the global market place. They can, however, lack the foresight to identify opportunities to bring this diverse capability together and then manage it to carry out projects to successful outcomes. The case of the development of an e-commerce web-site for a regional indigenous community, presented and analysed in this paper, demonstrates how this problem can be overcome by a motivated, cooperative and multi-skilled team.

This paper presents a case where economic and technical expertise from a regional university has joined with exceptional artists, working in a struggling local indigenous community, to conduct a project to develop an e-commerce website both to sell their art-works and to promote their rich local culture. In areas of research in the social sciences such as these, there is a need for a holistic theoretical framework to provide a basis for studies of complex socio-technical phenomena. A growing band of researchers recognise that Activity Theory provides a rich, holistic interpretation of how people do things together with the assistance of sophisticated tools in complex dynamic environments (Hasan 1999). Although the (cultural-historical) Activity Theory was proposed long before the advent of computers and the Internet, its holistic and insightful nature provides a suitable vehicle for research and analysis in this case because of the way human activity is defined, mediated by available tools and shaped by the environment in which it occurs. Thus, a multifaceted, holistic and dynamic framework from Activity Theory has been adopted as a vehicle to identify and analyse the components and events of the project, as well as the relationships between them, their evolution over the life of the project and the emergence of significant outcomes. The language and structure of Activity Theory also provides a suitable means of presenting the findings of the analysis and this is done here using Engeström's triangular depiction of human activity shown below in Figure 1 (Engeström 1987).

The emphasis that Activity Theory places on the influence of the historical and cultural environment on all human endeavour indicates that the analysis should begin with a rich description of the context of the project. This is done in the following section of the paper before the methodology is explained, justified and employed to analyse the project and its outcomes.

Background to the Case Study and Community

The case of an e-commerce based local initiative presented in this paper concerns the Coomaditchie United Aboriginal Corporation (CUAC 2004, 2005), which is a small not-for-profit community organisation dedicated to raising the esteem, pride and dignity of young Aboriginal people in their culture and heritage. The Corporation was established in 1993, with help from local TAFE personnel. The Coomaditchie community is located on a site known as the 'Mission', which is a housing development built with the support of the labour movement in the 1950s and 1960s in the Illawarra region of Australia. It is near the Coomaditchie Lagoon ("bad water" in the local language), which is an area of cultural significance for the local Koori community, although it is not a traditional habitation site. The community experiences

many of the issues faced by other Koori communities including unacceptably high unemployment rates, health, literacy problems and low levels of education, with high crime levels associated with drug and alcohol abuse. However, other more basic problems also limit the effectiveness of the community, such as a lack of registered cars and licensed drivers to allow people to get around for day to day activities.

For more than 10 years the CUAC organisation has provided programs with some financial support from government and a part-time community worker but would greatly benefits from an independent source of income. The long term aim of the corporation has always been to develop a sustainable and ongoing economic, cultural and environmental base for the community. As custodians of the Coomaditchie Lagoon, two of CUAC'S main aims have been to provide employment and training opportunities for the Koori community and to regenerate and care for the land around the lagoon. To this end the organisation has successfully conducted a number of land care and bush regeneration projects in the local area, managed traineeships, run appropriate education programs, conducted bush tucker tours in the local area and given talks on local Aboriginal Culture and heritage to a broad audience including schools and university students and local and overseas tourists. The website would provide the Centre with a steady, independent source of income to supplement their current dependence on short-term funding. This would allow stability and long term planning to achieve their social aims as well as provide some discretionary funding that could be used to meet immediate problems, such as providing a reliable 'work' car to be used for community activities.

The Coomaditchie Aboriginal Artists Co-operative is a significant group of Aboriginal artists that has developed an excellent reputation across the Illawarra community since they commenced painting in 1997. The artists have been designing and completing outdoor artworks and providing arts programs to mainstream and Koori communities in the Wollongong, Sydney and NSW South Coast areas. Artists from the Co-operative are skilled in tile mosaic work, ceramics, murals and painting on canvass, concrete, steel, brick, cement, and other medium.

Late in 2005, the University of Wollongong developed a new policy for community partnership and allocated funds for community partnership grants. Through personal contact, two researchers at the university came together with the social worker at the Coomaditchie United Aboriginal Corporation to apply for this university funding. The proposal was to use the e-commerce expertise of students in the Faculty of Commerce, guided by the researchers and social worker, to build an e-commerce website for the Coomaditchie Aboriginal Artists Co-operative and thereby provide a financial boost to the community as a whole. Although highly commended, the project was not funded through the community partnership scheme. However much enthusiasm and good-will had already been generated through the preparation of the grant submission, and it was decided to go ahead with the project using a range of disparate funding sources and a lot of in-kind support and voluntary labour.

It was recognised from the outset that there would be challenges for the project team in bringing together their diverse skills and ways of doing things. There have been only tenuous links between the two communities in the past. One person from Coomaditchie is a university graduate, and the Art Department has undertaken a number of projects with community artists. Coomaditchie now provides 'welcome to the country' ceremonies for the University. However, in general, the University of Wollongong has had difficulty in bridging the gap with its local indigenous

communities, despite having a dedicated learning centre to support these students. It was deemed important from the outset to bring everyone along and create a joint feeling of ownership of the project. All participants could see the multiple community benefits that would follow the success of the e-commerce site and were spurred on by the beauty of the works created by the artists. This paper describes how the project unfolded and analyses its components, challenges and benefits using a developmental research approach with an analytical framework based on Activity Theory as will now be explained.

Methodological Basis: the Cultural-Historical Activity Theory

This study follows a participatory and developmental research paradigm (NcNiff 2000), influenced by the expanding spiral of learning in the developmental work research (DWR) approach (Engeström 1987), where communities of learning and practice are viewed as activity systems (Virkkunen & Kuutti 2000). DWR provides a dynamic framework that can accommodate a multifaceted analysis of the community members, their motives and purpose for belonging, their relationships within the community and the tools that mediate community activity. In this research the tools include technology together with social and learning processes. Discipline is imposed on the investigation by the analysis of the case as an activity system, in the tradition of Cultural-Historical Activity Theory.

The Cultural-Historical Activity Theory is a social-psychological theory that grew from the work of the Russian psychologist Vygotsky during the first half of the 20th century. Vygotsky's important insight into the dynamics of consciousness was that it is essentially subjective and shaped by the history of each individual's social and cultural experience (Vygotsky 1978). In addition, Vygotsky saw human activity as quite distinct from that of non-human entities in that it is mediated by tools, the most significant of which is language. Vygotsky's work was continued by others, amongst them Leontiev who developed a conceptual framework for a complete theory of human activity (Leontiev 1981). According to Leontiev (1981), *activity* is a system that has structure, its own internal transitions and transformations, and its own development. Essentially, Vygotsky (1978) defined human *activity* as a dialectic relationship between *subject* and *object*, i.e. a person working at something. In this dynamic, purposeful relationship the 'always active' *subject* learns and grows while the *object* is interpreted and reinterpreted by the *subject* in the ongoing conduct of the *activity*.

Vygotsky (1978) also proposed an 'instrumented' structure of activity within a 'system of interrelationships' between people (Verenikina & Gould 1998). In other words all human *activity* is purposeful, is carried out through the use of *tools* and is essentially *social*. Vygotsky also believed that tools play a mediating role in all human activities and mental processes which can only be understood in terms of the tools and signs that mediate them.

To be able to analyse complex interactions and relationships, Engeström (1987) proposed a research framework with the object-oriented, tool mediated, and culturally mediated human activity system as the *unit of analysis*. This is represented in the triangle shown in Figure 1 which has been widely used in social science research over the last two decades (Hasan 2001). Here the core of an *activity* is a dialectic relationship between *subject* (human) and *object* (purpose) where the *subject* can be *individual* or *collective*, as in a group or team working on a common project. The *subject-object relationship* which defines the *activity* is mediated by *tools* and

community. Tools which mediate activities can be physical, i.e. technical or psychological such as language, ideas and business models. This is a two-way concept of mediation where the capability and availability of tools mediates what is able to be done and tools, in turn, evolve to hold the historical knowledge of how the communities behaves and is organised. This is particularly powerful when the tools are computer-based (Kaptelinen 1996). Influenced by the Scandinavian tradition, Engeström proposed that the formal, or informal, rules and division of labour of the community, in which the activity occurs, also dynamically mediate the subject-object relationship. Kuutti and Virkkunen's (1995) research has used activity systems as a representation of the common object of organisational work which cannot be studied by reducing the scope to one or another element, but where a minimum meaningful system as a whole should be taken as the unit of analysis and intervention. Engeström suggests that it is the internal tensions and contradictions of such an activity system, which includes both historical continuity and locally situated contingency that are the motive for change and development.

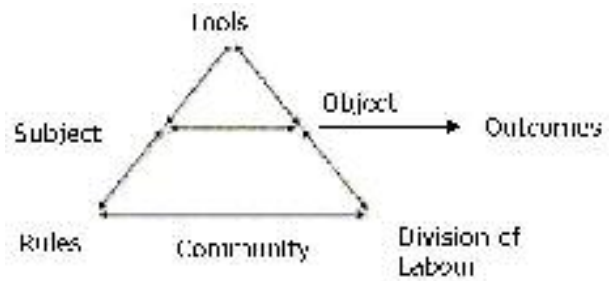

Figure 1. The subject-object relationship, which defines an activity, is mediated by tools and community through rules and division of labour. The subject may be individual or collective and outcomes of the activity are distinct from its object/purpose.

Cultural-Historical Activity Theory has been adopted to underpin a study of this project as it provides a multifaceted, holistic and dynamic framework for analysis and presentation of the findings. Other researches (for example, Lloyd & Cronin 2002) have found Activity Theory suitable for studies involving indigenous issues. In this case of developmental research, *activity* is a suitable unit of analysis where the project team is a *collective subject* composed of individuals who bring different skills and understandings to bear on a *common object*, the e-commerce site. One advantage of the theory is that it supports analysis of the dialectic interactions between people which are essentially cooperative rather than competitive together with the ways technologies shape and are shaped by human activity. Engeström's structure of activity (Figure 1) will now be used to analyse and present the case based on reflection of all participants at the time of writing this paper. Activity Theory is therefore used as a means of re-interpreting the project in hindsight rather than as a framework set up at the onset to collect and analysis data in the traditional research method.

The Coomaditchie e-Commerce Project as a Collective Activity

When activity is used as the unit of analysis, the activity of interest must first be identified and described in terms of its purpose and intended outcomes. This is

followed by a revelation of the mediating factors, namely the tools and communities together with the rules and division of labour. As time proceeds the activity results in outcomes, which can be interpreted in terms of the development of the activity and the relationship between its elements.

In this analysis, the main activity to develop an e-commerce service, together with the mediating tools and division of labour, were relatively easy to distinguish. These are identified and presented in the following three sub-sections of the paper. Of greater significance to the case are the rules of the two communities, the CUAC and the University, and how these rules mediate the conduct and outcomes of the activity. These rules, and their relationships to other elements of the activity, are described in the fourth sub-section. Here the researchers also reflect upon what can be learnt from this aspect of the case.

The Activity – Subject and Object including its Intended Purpose

A collective activity is identified by the subject-object relationship, i.e. who is doing what for what purpose. In this case a team of people came together to build an e-commerce website (the *object* of the activity) to display and sell the artworks of the Coomaditchie Aboriginal Artists Cooperative as well as provide information about their culture and events. The team (the collective *subject*) included two university academics, one in economics and the other in information systems, together with several graduate students from the university. Also on the team, promoting the endeavour, was the part-time social worker at the Coomaditchie community, together with a part-time IT support person and some of the Aboriginal artists. A diversity of skills, knowledge, attitudes and cultural traits were brought together in the collective subject or team. This is apparent in the various views of the different team members to the e-commerce endeavour as, respectively, technical, business or cultural.

The *purpose* of the *activity*, while overtly to develop the e-commerce website in order to promote increased sales of the artwork, involved other motives. These were to develop the Aboriginal community, the provision of real-world experience for the students, a research case for the academics and a positive example of a community partnership for the university. It was recognised that the Artists Co-operative has the capacity to provide a sustainable, long term economic base for the Coomaditchie community. However they do not have the business skills, infrastructure or capital to take advantage of the potential in the community to develop a successful business based on the Artists work or the potential for developing the community as an environmental and cultural heritage tourist attraction. The involvement in the e-commerce activity of local experts in regional economics and e-commerce from the university was intended to make up for these deficiencies.

The Activity – Division of Labour

The division of labour in the activity has been clear cut from the outset.

- One university academic, an economist, was responsible for guiding the business side of the venture, including the determination of the pricing of the artworks. She established the initial connection with the CUAC through a personal link with the part-time social worker employed by CUAC.
- The other university academic and the students from Information Systems were responsible for the design and development of the technical and functional aspects of the e-commerce site.

- The part-time social worker employed by CUAC played a vital role in mediating between the university and the CUAC participants. She describes her approach as 'sideways', by bringing up business concepts as part of other conversations, in effect planting seeds of ideas with certain community members and then letting them discuss these ideas with the rest of the community. The idea of the website was 'sold' as a means of earning money and gaining independence for the community as well as giving their art international exposure. It was a lengthy process, as the level of familiarity with computers by members of the community was relatively low. It is likely to be some time before community members can take over maintenance of the website. Opportunities to provide some basic computer literacy training through the University are now being explored to try and speed up this process.
- The CUAC Artists provided not only the artworks for sale and artistic content of the e-commerce site but also knowledge of the social and cultural significance of the project. As representatives of the broader Coomaditchie community, they conveyed both the need for the site to communicate the richness of their culture as well as the social imperative for this kind of support. Members of the community would be involved in the ongoing business activities that would follow once the site became 'live', including keeping the database of artefacts up to date and packaging items to be shipped to customers. Their training began once the e-commerce process was in the testing phase.

The Activity – Tools

Activity Theory recognises the importance of various types of tools including physical, service and mental. In this case the physical tools were closely aligned with the division of labour. Development of appropriate tools was essential to having the website function both efficiently from a commercial perspective and in a way that would be accepted by the Coomaditchie community. The tools involved the following;

- <u>Pricing spreadsheets for the database backing the website</u>. CUAC provided a set of standard 'on site' prices based on various sizes, status of the artist, complexity of the story portrayed, etc. This became the 'artists' price' or the amount returned to the actual painter/s. From this base a commercial or website price was developed which added on packaging, transport and insurance and internet provider costs (the minimum cost price), plus 5% for artists materials, 20% gallery mark-up (funding to go to CUAC), plus 10% GST and 3% for PayPal services. This gave the Australian commercial sale price. A small amount for additional transport and insurance, but less GST was calculated to give the International commercial price.

  In general prices worked out as follows;

  - For a large painting with artists' price of $750, Australian commercial price of $1,260, International commercial price of $1,280;
  - For a medium painting with artists' price of $200, Australian commercial price of $425, International commercial price of $455;
  - For a small painting with artist's price of $95, Australian commercial price of $265, International commercial price of $290.

In practice, most of the works placed on the website did not have these standard artists' prices, so a working spreadsheet was developed where the CUAC worker could put any price into the base line and it would automatically calculate the commercial prices. While the price is calculated on a 'cost plus' basis, these outcomes were checked against prices for similar works being quoted on other indigenous art websites. They were found to be quite competitive with other 'unknown' artists. The CUAC artists were initially somewhat taken back by these values. However, they do include some 'fat' so they can be reduced if paintings do not sell.

The main technical difficulty in developing the spreadsheet was the inclusion of GST as a percentage of the sale price, to be incorporated in an all-inclusive commercial price to put on the website. The university economist, not being an accountant, made several attempts at this before the final version of the spreadsheets was corrected by the Accountant employed to do CUAC's annual accounts. So now we have a compliant pricing calculation.

- An Internet provider and application for the technical development. Initially the information systems students on the team were keen to build the e-commerce site from scratch, as one in particular had good programming skills and had already scripted something similar for another project. This would be set up and tested on a research server at the University while a suitable Internet provider was found. However this had the drawback that any changes to the system in the future would need similar advanced computer skills that may not be readily available within the aboriginal community. Fortunately in the search for an Internet provider, one was found that also had an end-user application for small business to create e-commerce sites. An active member of the local community, he offered discounts and assistance to not-for-profit organisations. Using this package, someone with minimal computer application skills could be trained to maintain the site and had access to the provider's help if needed. The application also confirmed the decision on the use of a third party credit facility, PayPal, as the mode of customer payment.

- A good digital camera is owned by the community and one member is a good photographer. However, there have been problems in terms of getting appropriate quality photos to put on the website. A photographer from the University of Wollongong was recruited to train the community members to improve the photo quality for use on the website. This proved a simple task, as the indigenous photographer, also an artist, quickly understood how to adapt her style for internet usage.

- It was decided to include a separate fund to provide materials for the artists, which consists of a 5 percent markup on cost price. Originally, the artists provided their own materials, and tended to use whatever was around, some of which were of low quality, e.g. board. This fund will allow them to use good quality materials commensurate with the commercial prices of the art works. More importantly, a major aim of the premier artists at CUAC is to encourage young people to develop their artistic skills. This fund will provide materials to support that teaching function. This teaching function is very important with several young artists now putting works on the website. The premier artists also provide sessions to high school and TAFE students to introduce them to aboriginal art, which includes 'hands on' art sessions. Art work is

also developed for community cultural activities such as the Southside Festival in September.

- Accounting and banking facilities were required to back up the website to allow credit card purchases of art using the PayPal system, and to provide buyers with a guarantee of financial security when they use the site. This proved more difficult than expected, possibly because we had three different people working on it, at different times when they had some spare time, which rarely coincided and caused communication problems. The social worker was eventually able to create a PayPal account, which one of the students attempted to connect to the system. The first test showed this was not working and it eventually required help from the provider to enable the facility.
- Transport services were required to move sold works from the Coomaditchie hall to the home of the purchaser. Information on options and costs for this service were provided by TNT. This company had been recommended by another organisation. The transport costs for a typical national and international destination were calculated from this information and built into the spreadsheet calculations. Insurance costs for each sized work were calcualted using TNT's formula and also build into the calculations, taking the most comprehensive option. A trial purchase was conducted for a small painting to be delivered to Melbourne. This service proved effective with a few small initial glitches. It was decided however, that for small works, Australia Post delivery would be more convenient.

  The Coomaditchie community decided that it would like to do the packaging themselves as a means of training and creating employment for their own members. A $50 cost per item was build into the spreadsheet for this service. The quality of the packaging for the trail purchase was very good.

The Activity – Rules

As already mentioned, the activity analysis readily revealed the subjects, object, division of labour and tools using the framework of Figure 1. In contrast the analysis of the rules was more challenging and potentially of greater significance to the case. It was anticipated that the rules of the two communities, the CUAC and the University, would be distinctly different and that this difference would mediate the conduct and outcomes of the activity in a negative way. This anticipated difference is illustrated in research findings such as those of Chapman, et al., (1991) who found a marked distinction between the characteristics of Aboriginal and mainstream Management Schemes in Canada using the Hoftede (2001) cultural dimensions. They identify the Aboriginal management attributes as group oriented, consensual, team oriented, individually holistic with elder involvement, while mainstream North American management is individual, rule by majority, has specialised duties and employee development with no elder involvement. Similar cultural differences were anticipated to exist between the Coomaditchie community and the academics.

The Coomaditchie community was naturally cautious of the project to begin with, until some outcomes started to appear. It was also necessary for the artists involved in the subject team to inform and gain the acceptance of the rest of their community for the project before they could commit to it. This caution disappeared over time as the University people earned their respect over a series of important meetings at the beginning of the process. This was put down to the behaviour and approach from the

University participants, which was open and consultative, with a strong willingness to listen to what they wanted, trying to deliver this that rather than attempting to judge and drive the project from a technical or professional viewpoint. The Coomaditchie artists do not have any other established outlets for their art, except for a recently introduced annual exhibition, with most sales currently occurring through word of mouth. Thus, the website has the potential to make a significant difference to their lives if successful. Recognition of this probably also increased their willingness to work with the academics to develop the site.

Due to having only limited funding to support this project, the academics had to progress slowly, using 'cracks' of time in their busy work schedules for the project. It transpired that Fridays were the only time when both the Coomaditchie social worker and the academics were all available at the same time, and even then other projects often took priority. As a result, decisions taken one week could not be acted on until at least one week, and often several weeks, later. Every so often, the economist involved would get frustrated and initiate a flurry of actions which would progress the project for a while. However, soon some barrier would be reached, e.g. problems with the platform, web design or implementing the PayPal system, and the process would slow again. Eventually, a launch date was agreed with the expectation that a deadline might move things to some conclusion.

Nevertheless, we were surprised how minor were any consequences of the different 'rules' of the university and Coomaditchie communities. Indeed, the fact that the project proceeded at a slower pace than originally anticipated or desired, seemed to be a result of attributes of both communities. On the CUAC side there was a substantial caution in their approach to the venture while on the university side, the time pressures of a competitive, bureaucratic academic institution meant that work could only be done in spare moments. It is possible that the slowness with which apparent progress was made was actually beneficial in allowing the social-worker to develop a mediation role and facilitated acceptance of both groups of each other and of the object of the activity to grow naturally.

The Activity – Outcomes

While the primary intended outcome of the activity, the e-commerce website, was slow to eventuate, many other outcomes have emerged. The outcomes to date have been:

- A sense of pride in the community that they have a website, which provides a communication vehicle with other communities. This was particularly manifest at the launch of the site on 22nd August at the Wollongong Art Gallery, which was well attended by members of local indigenous communities, including a number of elders who travelled from Nowra, 100 kilometres away, to attend.
- An understanding that 'mainstream' (white fellow stuff) actions can be important for some things, and a willingness to take on these activities. In the past, many community members avoided mainstream activities due to previous bad experiences.
- It raised the social worker's standing in the community, with an increased acceptance by the Coomaditchie community that white people can make a positive contribution to their goals.

- It has increased the level of painting taking place.

The expected future outcomes will be:

- To earn money to support the other activities of the Corporation, and make life better for the families in the area;
- Eventually to allow the community to financially stand on its own and become independent of external funding sources;
- Provide recognition of their work and respect from the broader Illawarra community;
- Improve the status of Coomaditchie in the Illawarra aboriginal community, in that they have tended to be outside the ATSIC and Lands Council programs in the region in the past;
- It also appears that for some of the Premier artists in the Coomaditchie community, non-commercial outcomes are more important than making their own sales. In particular, that it provides a means of getting other people painting and selling their works, and thereby provides a means of promoting understanding of aboriginal culture in the wider community, which included in other pages on the website.

Conclusion

In addition to the commercial outcomes, this endeavour has provided intangible benefits by injecting some business know-how into the indigenous community. It is also a place for them to publish their cultural heritage and a demonstrable example of engagement in regional welfare for the university.

Activity Theory provided an appropriate and effective framework for the two academic members of the team to analyse the project in retrospect from a research perspective. While rigorously based in empirically tested theory, Activity Theory provides a very practical *unit of analysis* for complex situations such as that encountered here. Although one of the researchers was not familiar with the theory before this analysis, she recognised the suitable of the framework shown in Figure 1, and was soon able to apply it to the study in a meaningful way.

As reported here, the findings of the study using Activity Theory are consistent with, and complement, other work done in this area. Our observations, which emphasise the importance of different community *rules* and how they influence the conduct of a *collective activity*, confirm the description in the Canadian study (Chapman, et al., 1991) of the different cultural issues between indigenous and mainstream team management. However the positive outcomes of our *activity* demonstrate that these can work in harmony when the diverse team-members are dedication to a common *object*, in this case an e-commerce website to enhance the welfare of a regional community. In this case, each community was prepared to recognise and respect the rules or pressures affecting the other when developing their working relationship. The slow rate of progress, normally seen as a hindrance to activity development, in this case provided a means of allowing the different community rules affecting the indigenous and academic team members to adapt to each other, rather than creating the expected source of tension.

References

Chapman I. McCaskill D. and Newhouse D. (1991), Management in Contemporary Aboriginal Organisations, *Canadian Journal of Native Studies,* 11/2 downloaded from http://www.brandonu.ca/native/cjns/11.2/ July 2006.

CUAC, Coomaditchie United Aboriginal Corporation (2004), *Indigenous Stock Exchange*, http://text.isx.org.au/projects/1084597365_8137.html Modified:Friday, 03-Mar-2006 15:48:29 EST.

CUAC, Coomaditchie United Aboriginal Corporation (2005), *A Different Warrawong - Case Study,* http://www.communitybuilders.nsw.gov.au/solutions/warrawong/difwar.html 16 Nov 2005

Curtin J (2001) A Digital Divide in Rural and Regional Australia? URL Current Issues Brief, Parliament of Australia Library, available at http://www.aph.gov.au/library/pubs/CIB/2001-02/02cib01.htm, last accessed July 2006.

Delong M., Gahring S., Bye E., and Johnson K. (2002), Using the Internet to enhance business opportunities in rural areas. *Journal of Family and Consumer Sciences* 94/3 33-38.

Engeström Y. (1987), *Learning by expanding: An activity-theoretical approach to developmental research*, Helsinki: Orienta-Konsultit.

Hasan H. (1999), Integrating IS and HCI using Activity Theory as a Philosophical and Theoretical Basis, *Australian Journal of Information Systems*, 6/2 44-55.

Hasan H. (2001), An Overview of Techniques for applying Activity Theory to Information Systems**,** in Hasan H, Gould E. and Larkin P. (eds) *Information Systems and Activity Theory: Volume 2 Theory and Practice,* Wollongong University Press, 3-22.

Hofstede, G. (2001), *Culture's Consequences***,** *Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, Thousand Oaks CA: Sage Publications.

Kaptelinin V. (1996), Activity Theory: Implications for Human-Computer Interaction in B.Nardi (Ed.), *Context and Consciousness:* MIT Press, 103-116.

Leontiev A.N. (1981), *Problems of the Development of Mind,* Moscow: Progress.

Lloyd M. and Cronin R. (2002), A Community of Teachers: Using Activity Theory to investigate the implementation of ICTE in a remote Indigenous school, Proceedings of AARE, Brisbane Queensland, accessed from http://eprints.qut.edu.au/archive/00003572, July 2006.

MacGregor R., Vrazalic L., Carlsson S., Bunker D., and Magnasson M. (2002), The Impact of Business Size and Business Type on Small Business Investment in Electronic Commerce:A study of Swedish small businesses, *Australasian Journal of Information Systems*, 9/2, 31-39.

McNiff J. (2000), *Action Research in Organisations*, Routledge: London.

Skogseid I. and Jansen A. (2001), Booktowns on the Internet: Rural Enterprises enter the Network Society, *22nd International Conference on Information Systems*, 385-393.

Virkkunen J. and Kuutti K. (2000), Understanding organisational learning by focusing on 'activity systems', *Accounting, Management and Information Technology*,10, 291-319.

Vygotsky L.S. (1978), *Mind and Society*, Harvard University Press: Cambridge, MA.

Verenikina I. and Gould E. (1998), Cultural-Historical Psychology and Activity Theory, in Hasan H, Gould E. and Hyland P. (eds) *Information Systems and Activity Theory: Tools in Context,* Wollongong University Press, 1-18.

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