Theory building for ICT4D: the use of theory triangulation in case study research

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Abstract

The dominance of case study methods in ICT for Development (ICT4D) research presents challenges in comparing findings across studies for the purpose of theory building. This paper addresses this issue by outlining a method in theory triangulation as a way to systemize case study research across multiple cases in ICT4D. Three approaches to social development outlined by Hall and Midgley are used to provide contrasting theoretical perspectives on development. These are: Populist, Enterprise and Statist. The application of these three contrasting perspectives using theory triangulation is demonstrated in the analysis of multiple case studies taken from a community technology centers (CTC) program in Australia.

1. Introduction

ICT for Development (ICT4D) research presents challenges in comparing findings across studies for the purpose of theory building [1][2]. The popularity of case study methods in ICT for Development (ICT4D) research reflects the challenges of working in this area. Projects are usually of a limited scope where there are minimal numbers of actors thereby ruling out statistical research. The introduction of new technologies creates unforeseen effects that cannot be predicted in advance but may be important in coming to a meaningful understanding of the research problem. Hence the use of experimental methods is not appropriate. As described by Yin in case study research is the method of choice when you are required to study contemporary events over which the researcher has little control [25]. Creswell adds to this by stating that the case study method is appropriate for the study of a bounded system, which is rich in content [3].

The difficulties in using the findings of ICT research based on case study methods for theory building relate to the many influences that the physical and social environment can exert on the adoption process. Kling states that studies that assume there is a simple cause and effect process in the adoption of ICTs fail to account for social relationships, incentives and existing knowledge [11]. In outlining the challenge for theory building, Kling advises that greater attention needs to be given to systemizing case study research in ways that can contribute to public policy and professional practice.

This paper responds to this challenge by describing the method used to research a CTC program that had 17 case studies at its disposal. In order to cope with the complexity of coming to an overall understanding of these cases a method was used to systemize the collection and analysis of data in relation to a body of theory in social development. This body of theory was taken from the work of Hall and Midgley who describe three dominant approaches to social development: Populist, Enterprise and Statist [7]. Each perspective respectively emphasizes the role of community, private sector and government as major actors in social development. The paper will demonstrate the use of these three perspectives to triangulate case studies in order to recognize varying influences that in turn give these cases their unique character. In doing so, this style of analysis can be seen to systemize the analysis of multiple cases in relation to these three philosophies.

The paper begins with a brief discussion of the complexities associated with ICT4D research and practice. The paper then explains the three philosophical approaches to social development that Hall and Midgley outline [7]. The paper then moves on to case studies that are drawn from research into NSW CTC Program in Australia in the period 2000 to 2008. This includes a background to the program and the research design that was employed to analyze the cases. This part of the discussion concludes with an explanation of how Hall and Midgley’s ideas are operationalized as constructs within the research. The paper proceeds to describe the analysis of 17 case studies using the constructs demonstrating how the three approaches to social development and their assumptions draw out different aspects of the case study accounts. The paper concludes with a discussion

\[1\] The author acknowledges the assistance provided by volunteers and staff of the CTCA in NSW and its members.
about this approach with suggestions for further development of this method.

2. The complexities of ICT4D research

ICT4D research represents a contemporary and important area of research which has attracted the interest of a range of disciplines. With this come the challenge of resolving different epistemological traditions that make varying assumptions about key factors such as development and context [1]. Avgerou argues that the biggest challenge for ICT4D research is to develop theory which is capable of “addressing the interrelationship of ICT innovation with its cognitive and sociopolitical context”. [1, p.11].

This paper seeks primarily addresses researchers with an interest in Information Systems as a discipline and the use of case study research as a method by which research data is collected and analyzed. A common feature of most studies that seek to understand the use of ICTs in social settings is the challenge of dealing with complexity. During the 1990s, Kling pioneered research which demonstrated that the use of ICTs in organizations generated a complex array of social interactions where the potential for controversy were numerous [10]. When the term ‘digital divide’ entered common usage he noted similar confusion in the way that ICTs were once again held up as a panacea to a range of social problems [11].

Kling argued that such conceptualizations of the digital divide oversimplified the relationships that exist between technology and people. Labeling this approach as the ‘tool model’, he described its misconceptions as being related to the assertion that predictable and beneficial outcomes could be predicated on the introduction of ICTs [11]. By characterizing ICTs as a tool, Kling stated that many important social influences on the adoptions of ICTs are ignored such as incentives, social relationships and knowledge. Kling outlined the socio-technical model of ICT adoption that seeks to engage with the complexities of ICT use in real world situations. Further, Kling called for systematic research that is able to respond to such complexities in order to inform public policy and professional practice.

The issue of complexity in ICT4D is based on the same premise to Kling’s, where complex socio-technical relationships develop when ICTs are deployed within social settings. The focus of such social settings in ICT4D research is often the community [14] [23]. Coupled to the desire to see transformations within communities through the use of ICTs, the challenge of achieving viability of economic and institutional arrangements that give support to community-centered ICT projects is also recognized. This, by definition, includes developing capabilities to assimilate ICTs in ways that empower communities to achieve higher levels of development [8].

The response from ICT4D researchers to this complexity has been a multidisciplinary effort where a number of theories and methods have been used to describe and rationalize the challenges of ICT use often within community settings [8]. This appears as both a potential strength and a weakness. If there is insufficient cooperation across disciplinary divides the work of case study researchers will lack the kind of systemization Kling speaks of. Accordingly, this reduces the impact of such research on public policy and professional practice. The strength of multidisciplinary efforts lies in the application of methods that are able to consolidate these findings in ways that speak meaningfully to a diversity of actors. This is where theory triangulation can play an important role.

Triangulation is a general method used in qualitative research to promote reliability and validity of the research. Triangulation challenges researchers to adopt different perspectives when collecting and analyzing data. Such perspectives can include data types and methods [9][12]. As Stake comments, the application of triangulation is a ‘win-win’ for qualitative research [21]. When the additional checking confirms an earlier finding this is good to know. When this checking raises doubts about an earlier finding, there is a need to investigate further.

The use of theory triangulation seeks to apply different theoretical perspectives to a common set of data to determine areas of agreement and disagreement [5]. Areas in which agreement occurs suggest that relevant aspects of these theories resonate more strongly than areas in which disagreement exists [12].

The scrutinizing of research data for explanations from three perspectives is designed to provide added reliability by challenging possible interpretations from other theoretical perspectives. Theorizing in ICT4D is contentious and could be made more efficient by incorporating alternative interpretations during the research process.

Finally, the role of theory in research is also an area which requires clarification. Creswell observes that the use of theory in the broad spread of qualitative research can be understood as representing a continuum where, at one end, theory is used prior to the research to ask questions and guide data collection or, at the other end, used after data collection to make sense of research data [3, p. 87]. The genre of case study research referred to in this study is influenced by Yin’s advice which seeks to use theory to “guide the study in an explanatory way” [3, p. 85]. To that extent the
application of different areas of theoretical discourse during the research places it in the middle of these two extremes.

This speaks to the difficulties of defining the effect that context will have on the use of ICTs in any particular community setting. In response, the paper seeks to ground the discussion in the broader social policy debate described by Hall and Midgley. The following discussion on their three normative approaches to social development marries well with theory triangulation. Having three approaches to apply is perhaps convenient because there is no specific requirement for three perspectives as Janesick notes [9].

3. Theories of Social Development

The work that Hall and Midgley have undertaken in creating a framework in which to consider social development policy is argued here to provide an avenue by which to systemize cases in ICT4D research. It is useful to recap on the motivation for Hall and Midgley’s work in this area. They note that practitioners working in field often do so without the benefit of theory. While there are many reasons for this, they identify a need to bring together the lived experience of practitioners with the dominant theories of social development to illuminate, educate and advise both researchers and practitioners in order to make social development most productive. Hence, they are motivated by a desire to promote the utility of academic research for practitioners in the field.

In seeking to better clarify the attributes of various social development strategies, Hall and Midgley identify different values and objectives at play [7]. As values and objectives that underpin these strategies may not be immediately obvious they argue that rational assessment and debate of these issues cannot be achieved without normative theories that identify fundamental areas of belief about ‘how the world works’ and the influence this has on social development initiatives. This leads Hall and Midgley to propose three normative approaches to social development.

The three normative approaches Hall and Midgley define are: the Populist approach; the Enterprise approach; and the Statist approach [7]. At the heart of their investigation is the identification of ideologies that give voice to the values and assumptions of each of these approaches. The three ideologies that are described are populism, individualism and collectivism [7] [13]. By articulating the values and assumptions of each ideology, they argue that informed debate about theory development is facilitated.

In explaining these three approaches it makes sense to begin with the Statist approach to social development because, in a historical sense, it is antecedent to the two other approaches of Populist and Enterprise. The Statist approach was most prominent in the decades after World War Two [7, p. 29]. The primary attribute of the Statist approach is the central role that governments play in improving social conditions by “introducing a range of social services to meet social needs and raise living standards of ordinary people”. The underlying ideology that Hall and Midgley indentify is collectivist which holds the view that “the best society is one in which people cooperate to meet their common needs”.

Criticisms of the Statist approach challenge the assumption that governments always act in altruistic ways to better the lives of individuals within society. Two themes to such criticisms have emerged. On the one hand critics argue that government development programs do not sufficiently encourage personal responsibility and in many cases has led to laziness and indolence. Other critics argue that government bureaucracies are often found to be indifferent and insensitive to the needs of their citizens. These two streams of criticism are significant in that both gave impetus to the emergence of Enterprise and Populist approaches to social development respectively. Hence, an unarticulated assumption of the Statist approach is that governments are naturally motivated to promote the most effective social development initiatives for its citizens.

The second approach defined by Hall and Midgley is the Enterprise approach. The Enterprise approach stresses “the primacy of the market in social welfare” [7, p. 31]. What this means is that social development policies are designed to be in harmony with the theory of the market economy. Hall and Midgley describe people who subscribe to the primacy of the market as “neo-liberals” (p. 31). Their fundamental ideology is that all individuals are primarily motivated by selfish desires. Social development projects based on the Enterprise approach emphasize entrepreneurship, commercial activities and the private sector.

Criticism of the Enterprise approach is partly motivated by ethical concerns that people will be locked into unequal power relationships. Also of significance, particularly to this study, are situations of ‘market failure’, which refers to situations in which the working of the market undermines the attainment of a desirable social outcome. Hence, an unarticulated assumption of the Enterprise approach is the belief that a viable commercial market will exist that is able to deliver the desired social development outcomes.

The Populist approach to development is characterized by attempts to make development...
responsive to the needs of people. Hall and Midgley define the Populist approach in terms of “active community mobilization mediated via a range of institutions as a means of articulating people’s needs and enhancing their participation in the process of policy design and implementation” (p 36).

In seeking to focus on people, the underlying ideology of the Populist approach is one that values individuals and their immediate personal relationships with other people. Consequently, it stands between selfish individualism of the Enterprise approach and the impersonal nature of government institutions found in the Statist approach.

Criticism of the Populist approach may stem from unsavory manifestations of community cooperation. These include misguided nationalism where “other” nationalities or ethnicities are targeted in negative ways or the kind criminal activity associated with South American drug cartels or the Sicilian Mafia [6]. Hence, an unarticulated assumption of populism is the belief that communitarian activities invariably lead to social development.

In reflecting on the three normative theories to development, Hall and Midgley state that the three approaches differ in their perceptions of how “the world works and how its problems are best tackled”. Similarly, the philosophical perspective that purports to explain how the world works will also color perceptions of what constitutes success. They map out a vision for a “holistic social policy” that brings together the strengths of each of the normative approaches that they have defined and reduce the effect of their negative effects. This holistic view for social development provides a rationale by which ICT4D theorists may engage with the work of Hall and Midgley.

The immediate significance of these three approaches for this paper relate to the ways in which ICT4D projects can be ‘located’ using theory triangulation (see Figure 1). Each approach purports to address social needs through alternative means. In combination, the three perspectives define a framework by which comparisons between different cases in ICT4D can be made.

4. The NSW CTC Program

The application of the three approaches to social development derived from Hall and Midgley’s work is demonstrated in relation to research carried out into the NSW CTC Program in the state of New South Wales (NSW) in Australia. The NSW CTC Program was funded primarily by the Australian Government and to a lesser extent the NSW State Government. The

Figure 1: Triangulation using three normative approaches to social development
cases studies to determine whether there was evidence that resonated with the statements as a basis for analysis [25].

For example, in relation to Populist approaches, evidence was sought that supported the idea that social development is predominantly achieved through groups of people working cooperatively for the benefit of their community. In the case of the Enterprise approach, evidence was sought for entrepreneurialism and private sector activity in the provision of commercial services as being key to achieving social development. In relation to the Statist approach, the analysis was directed to look for evidence of social development that was met through active involvement of government in sponsoring and managing the provision of services to the community through the CTC.

When considering each philosophical approach the analysis adopted two perspectives when analyzing case study data. One perspective endeavored to promote understanding of processes that related to the management of internal relationships within the CTC and the second promoted understanding of the relationships the CTC had established with the broader community. To that end, Table 1 summarizes factors that were identified as important to each factor and used to probe case study data.

5. Results

Over a period of four months in 2007, 17 CTCs were visited where interviews were held with managers and volunteer staff. Surveys were also made available to customers. The demographics of the 147 respondents to the survey were characterized by an average age of 40 years and favored females in all age categories except in the under 20 range where the gender balance was approximately equal. Out of these respondents, 137 were local to the community in which the CTC was located. The paper proceeds to report on the 17 cases using the three perspectives outline in Table 1.

5.1. Application of Populist constructs to the case studies

The Populist perspective of social development theory was applied to the case study accounts to determine how relevant these principles were to these cases. The paper will firstly consider internal processes within the CTC as they related to individual customers. It will then consider the role of the CTC as an organization in the broader community.

Unsurprisingly, use of the Internet and computer applications was valued highly by half of the customers who responded to the customer survey. Related to this was the identification of training (10%). Having access to office technologies such as facsimile, printing and laminating facilities was also identified as a valued service by respondents (8%). While technology-use was rated highly it was interesting to note that social interaction (18%) was rated as a valued aspect of people’s use of their CTC. The vast majority of people (90%) nominated the CTC as a place in which they had learnt new knowledge and skills. Strongly represented in this data was IT skill development (80%). Once again indicating the social character of CTC operations, 71% of respondent indicated that the CTC had been a place where they had learnt skills in community group participation.

The ability of CTCs to respond to the needs of the community extended beyond providing individuals with access to ICTs and a friendly social environment. The link that can be drawn between local problems and CTC services indicates that the CTC, as an

<table>
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<th>Table 1. Constructs used to analyze cases</th>
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<tr>
<td><strong>POPULIST</strong></td>
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<tr>
<td><strong>Assumption:</strong> community-based processes invariably lead to social development</td>
</tr>
<tr>
<td><strong>Things to look out for:</strong> cooperation; interdependent relationship; active community mobilisation; participation in decision making.</td>
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<tr>
<td><strong>ENTERPRISE</strong></td>
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<td><strong>Assumption:</strong> a viable commercial market exists for services that promote social development</td>
</tr>
<tr>
<td><strong>Things to look for:</strong> managing the CTC as a business; operation of a commercial market; commercial provision of services; competition; entrepreneurial activity; market failure; exploitative commercial relationships.</td>
</tr>
<tr>
<td><strong>STATIST</strong></td>
</tr>
<tr>
<td><strong>Assumption:</strong> governments invariably work to achieve social development outcomes for its citizens.</td>
</tr>
<tr>
<td><strong>Things to look for:</strong> government sponsorship of programs; government management of programs; indifferent bureaucracies; high dependency by individuals on government.</td>
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organization, reflected Populist values. The most obvious example of such problems is the one of isolation that, by definition, affects regional towns in Australia. CTCs were found to provide a range of alternatives to needing to travel to major centers. Examples ranged from providing access to job search websites, undertaking correspondence courses, form-deposit services on behalf of government departments and so on.

The provision of training in the use of ICTs can also be seen to serve the needs of people who have previously had little exposure to ICTs. This was particularly apparent in the different kinds of opportunities CTCs provided to seniors. In one location, formal training courses were provided on a fee-for-service basis while in other places training was delivered through less formal means such as computer clubs for seniors. It was also apparent in the training that was provided to unemployed people under “work-for-the-dole” programs.

Seven of the cases were found to have developed a number of initiatives to counter the problem of youth boredom by developing LAN (Local Area Network) parties and movie nights. In response to declining economic conditions, one CTC had developed a sophisticated e-commerce and community portal that was designed to assist the region’s adjustment away from forestry and cattle farming to cottage-based industries.

In summary, it can be seen that all of the case studies enjoyed a significant degree of freedom to pursue initiatives that were aimed at addressing local problems. This freedom was apparent in customer surveys where it was found that individuals were able pursue a variety of interests that would not have been possible if the CTC had not been established. It was also reflected in the way CTCs were able to develop initiatives to address local problems. However the case study accounts indicate that this freedom was not unbridled because the initiatives were shaped by contingent circumstances. Such circumstances were associated with the expertise and attitudes of managers and management committees, the nature of organizations that originally auspicied CTCs in their early stages of development as well as economic conditions, which was found to limit opportunities for income generation.

Therefore the case study data resonate strongly with the descriptions that Hall and Midgley associate with Populist values. Case study accounts reflect positive interpersonal and reciprocal interaction between staff, volunteers and customers within a CTC. These cooperative relationships are found to be of critical value because most of the case study CTCs would not have been able to remain operational if cooperation from volunteer staff was absent. It was also found that the broader community appreciated the contribution that their local CTC had made to the community. Even though the CTC was a relatively new institution in the town CTCs had quickly been accepted as a significant source of information in the community in matter related to ICTs. Hence, it can be seen that Populist values were partly responsible for the positive contributions the CTC had made to social development in their respective communities.

As for possible negative manifestations of CTC autonomy it was noted that a code of behavior, mandated by the CTC Association (CTCA) for its members, required managers to take a number of steps to ensure a safe environment for all, particularly children. This code included statements prohibiting bullying and violence and limiting people’s access to sites that promoted violence, pornography or gambling. To that end, managers were keen to ensure that CTCs did not facilitate unsavory or criminal activities.

Despite the good intentions and cooperation of many in the community to make their CTC a success it was clear that this was not sufficient in itself to ensure the ongoing operation of the CTC. The following analysis of these cases using Enterprise and Statist approaches provides insights into the limitations of the Populist model of social development.

5.2. Application of Enterprise constructs to the case studies

The paper moves on to address the Enterprise approach to social development perspective described by Hall and Midgley. Referring to Table 1, Enterprise approaches to development emphasize entrepreneurialism and commercial activity of the private sector as the primary forces for social development. It is interesting to note that the NSW CTC program was most closely aligned to the Enterprise approach outlined by Hall and Midgley. In the NSW CTC Program, CTCs were envisioned to become independent businesses in which the private sector was reasoned to play a central role which was consistent more generally with Australian government policy at that time [4][16][17]. In seeking to explore the relevance of the Enterprise approach to the cases, the paper proceeds to, firstly, detail information about the internal challenges of managing CTCs as a business. It will then describe relationships CTCs...
shared with other private sector organizations in the local community.

One important insight developed during the course of interviews with managers was the value of their business plan. Business plans were a necessary requirement when CTC management committees applied for funds to initially establish their local CTC. Managers had commented that the business plan had been useful in guiding them when developing new initiatives as well as monitoring costs using a monthly budget. This was apparent across all the case studies where managers displayed a strong commitment to cost containment.

Despite evidence that managers were employing responsible financial practices, the majority of managers were quite pessimistic about the future commercial viability of their CTC. The major cost area for all of the cases was the employment of the manager. In fact, some CTCs had adopted a model where the manager’s position was filled on a voluntary or part-time basis. In addition to the cost of employing a manager, other significant costs were rent and utility costs. As will be detailed in the next section, local governments were active in supporting CTCs either through grants or subsidies for salaries, premises or utility costs.

Managers displayed a willingness to integrate their CTCs into the town’s economy. For example, two of the case study CTCs provided a niche small-run printing capability which was offered in cooperation with the local printers where each would direct business to the other if jobs were respectively too large or too small. In some cases, because CTCs were closely associated with local government, competitive neutrality requirements had limited the development of business opportunities. The management skills required developing the CTC as half-business and half-public service presented unique challenges, even to managers who previously had held high-level managerial roles in the private and public sector.

CTCs were found to have made a significant contribution to the integration of modern ICTs into local businesses. CTCs were often a source of advice for business owners wishing to purchase new equipment or for those who were experiencing problems with their computing equipment or software. In some cases, CTCs arranged for the purchase of computers from suppliers on behalf of these businesses. Itinerant business and government workers also figured in the accounts of managers as users of CTC facilities. Though not great in number, they were reported to need access to the Internet and other CTC facilities such as printers.

Broadband technologies were a catalyst for new modes of business in some locations. For example, the development of a sophisticated e-commerce portal described in the previous section brought together local council, business and community groups to one central web location. However, the general tenor of case study accounts indicates that local business had not embraced the opportunities the CTC had provided for web hosting services. The optimism surrounding the availability of video conferencing facilities had largely not materialized into significant revenue extremes except in the case of one case.

In summary, the review of the cases indicate that the goal of developing CTCs as viable independent businesses as originally planned in the NSW CTC Program was not fully realized. The emphasis on business development in the NSW CTC Program had given impetus to a wide range of idea generation that generally addressed local needs. Thus, the connection drawn between private sector activity and entrepreneurialism by Hall and Midgley is consistent with the case study accounts here.

Despite the disappointment of insufficient income, it can be seen that the services that generated this income were, nonetheless, beneficial and important to the community. Rather than managerial failings, the evidence from the cases suggest that underlying assumptions based on the Enterprise model of social development, led the program planners to ignore the prospect of inadequate income. for which there was no contingency plan. In hindsight, it is difficult to see how CTCs could have avoided the obdurate forces of economic decline brought on by the drought that were closing down many businesses in regional areas. In the face of these unexpected developments, it became apparent that no contingency plan existed and 20% of the 89 CTCs closed down within two years of government funding ceasing.

Applying an Enterprise lens to the case study accounts enables an alternative perspective to the Populist perspective. It can be seen that CTCs were highly active participants in their town’s commercial sector and, in varying degrees, demonstrated entrepreneurialism. In fact, the enthusiasm that underpinned entrepreneurial activity was difficult to separate from the cooperation of volunteers that were found when applying Populist lens to the cases.

Even though CTC managers and their staff were found to be applying recognized management practices, insufficient revenue streams resulted. This apparent irony stems from an assumption about the sufficiency of commercial markets to enable social development goals to be achieved. On the basis of evidence from these cases, it is clear that such an assumption was false.
5.3 Application of Statist constructs to the case studies

The third social development perspective that is used to analyze case study data is the Statist perspective. The Statist perspective relies on the idea that governments are best placed to deliver services to achieve social development outcomes (see Table 1). Given the NSW CTC Program’s reliance on the private sector to promote social development the Statist perspective, from a theoretical perspective, represents the antithesis of the Enterprise perspective (and to some extent the Populist perspective). This is seen in the way that the NSW CTC Program mandated that government was to quickly remove itself as a primary funder of the CTC Program to assume the role of “customer” to these CTCs. The application of Statist constructs to the case study accounts was useful in illuminating the complex and, sometimes, confused relationships CTCs shared with various levels of government.

The significance of the Statist perspective on the internal management of CTC is best reflected in the absence of government involvement in the day-to-day running of the CTC. Consistent with the underlying philosophy of the NSW CTC Program, CTCs were managed by local management committees. Managers enjoyed the freedom this provided. Interviews did not reveal a desire for government assistance in the management of their CTCs. Such was the strength of this sentiment that in order to enjoy full autonomy over the running of the CTC one manager opted to pay commercial rent rather than accept the offer of free premises from local government.

The program’s goal of quickly transforming the role of government to one of customer was evident in the variety of service offerings CTCs provided on behalf of government departments. At the national government level examples included Centrelink (agency for government pensions), the Australian Tax Office and Medicare. At the level of state government, the most prominent was a service called Access NSW service where each CTC was given a computer and approximately AUD$500 per year to provide this service. At the local government level, the CTCs provided a number of services such as tourist information, collection of local taxes and hosting of local groups.

Despite the intention of the NSW CTC Program to remove governments from direct operational responsibility for CTCs, the case studies revealed that many CTCs relied on local government for partial ongoing support. Out of the 17 cases, 12 received support from local government sources. Such support ranged from the provision of premises, the payment of utility and broadband costs to cash grants. Even though managers valued the independence of their CTCs it was necessary for some managers to work with local government in order to keep the CTC operational.

In applying the Statist perspective to case study data it can be seen that managers did not want a system where government support was exchanged for autonomous control of their CTC. Rather, a new form of involvement by government was suggested which recognized the efficacy of community cooperation and the unsustainable nature of the commercial model but did not require the overarching burden of government control. In effect, managers appeared to be calling for a new model of interaction with government that could benefit from the insights of ICT4D theorists.

6. Discussion

The systematic probing of the case study data in this paper from the three perspectives of Populist, Enterprise and Statist establishes a locus for theory building (see Table 2). Hall and Midgley, in outlining a case for the development of “holistic” policy, suggest an approach that brings together the strengths of each of the normative approaches while simultaneously seeking to mitigate their weaknesses. Given the unique and diverse circumstances of the 17 cases, the following discussion seeks to distil a common understanding of the NSW CTC Program as a tangible step in the task of theory development in ICT4D.

In summary, it can be seen that CTCs have largely maintained a focus on problems of a local nature as determined by local CTC management committees and managers. The case study accounts reveal novel ICT based responses to challenging problems. The analysis suggests that Populist approaches to social development were strongly reflected in the case study accounts. While the autonomy of CTCs was not unbridled, it was clear that the centre of decision-making power resided in local communities and that these communities mobilized themselves effectively in response to problems of local concern. However, it was also clear that the cooperation that was at the heart of community mobilization was not, in itself, sufficient to ensure CTCs were able to maintain their initiatives in the face of wage, utility, rent and other costs.

From the Enterprise perspective, it was found that involvement of the private sector in the operations of CTCs was important. On the one hand, the management of CTCs was characterized by responsible policies that focused on cost containment. On the other hand, program planners made an incorrect assumption about the amount of income that could be generated in constrained regional economies. In the
Table 2. Summary of findings

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<tr>
<th>Analysis of processes internal to CTC</th>
<th>Populist</th>
<th>Enterprise</th>
<th>Statist</th>
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<tbody>
<tr>
<td>Positive interpersonal and reciprocal interactions among staff, volunteers and customers</td>
<td>CTCs were managed in a cost effective way based on a business plan</td>
<td>CTCs valued their autonomy from government highly. Some were searching for assistance from government</td>
<td></td>
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<tr>
<td>Analysis of processes external to CTC</td>
<td>Broader community appreciated the role that the CTC as an important actor in the town</td>
<td>CTCs were active participants in the town’s economy; entrepreneurial activities were evident</td>
<td>Government was generally viewed as a commercial customer although some confusion about this role was evident</td>
</tr>
<tr>
<td>Contradictions</td>
<td>Cooperative behaviour and volunteerism were not sufficient to sustain CTCs</td>
<td>Income streams were insufficient to sustain CTCs</td>
<td>Government priorities do not always work to achieve social development</td>
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In the great majority of cases, this income was not sufficient for CTC needs. This last finding gives voice to criticisms of the Enterprise approach where the absence of an alternative strategy should sufficient income levels not be attained placed numerous CTCs in a precarious position.

The failure of private sector enterprise to provide sufficient support for CTCs brings into focus questions about what role government should play in supporting CTCs. The need for local government support of CTCs provided prima facie evidence for the need for further work in developing strategies for government to better support CTCs. It was apparent from the responses of managers that they were not advocating a return to a Statist model of social development where local autonomy would yield to centralized government control in return for gaining sufficient resources from government. In effect, CTC managers seemed to be outlining a challenge for ICT4D theory development in that new modes of engagement with government were being called for. This mode of engagement appears as one that enables CTCs to gain some support for their operations, which did not require them to cede autonomy back to centralized government control.

Hence, in seeking to extract fundamental principles on which to build theory for ICT4D, a number of strengths of the three approaches to social development can be brought together to develop a holistic understanding of the NSW CTC Program. The Populist approach to development highlights cooperative relationships among community members in seeking to address local problem through ICTs. This is best reflected in the importance that the analysis attaches to community autonomy and the need to maintain such autonomy in relation to the other significant actors of the private sector and government.

Based on the cases detailed in this paper, the most urgent aspect of the theory development agenda relates to better clarifying a role for government in supporting ICT4D projects in ways that recognize the short comings of the Enterprise approach but do not extinguish community autonomy and entrepreneurship.

The paper recognizes that ICT4D projects are more diverse than the NSW CTC Program. For those who feel that the three approaches to social development are not fully cognizant of the lived experience of particular communities, Midgley responds by stating that the synthesis of normative perspectives need not be limited to the three outlined in this paper [13]. He recognizes the need for theory development to “transcend established Western preoccupations” (p. 841). Given the numbers of people throughout the world whose normative perspectives are drawn from indigenous cultures and religions the need for a more systematic inclusion of such perspectives is evident. From these local perspectives, the philosophies that underpin concepts of community, private enterprise and government will arguably result in different outcomes and understanding when implanting ICT4D projects. The fundamental approach remains the same, however, where the method is to articulate fundamental philosophies and expose hidden assumptions with a goal to better understanding the implications of ICT4D projects in their local context.

7. Conclusion

Given the potential of ICTs to assist communities to achieve higher levels of development it makes sense to continue work on developing greater theoretical clarity in ICT4D research. Recognizing the complexities, effort is required to better systemize research in ways that enables comparisons to be made, dialogue to occur and greater efficiencies in the research effort to be achieved. The paper makes a contribution to greater systemization by outlining a method that acknowledges alternative theoretical
perspectives that have strengths and weaknesses. Rather than seeking to limit participation in ICT4D research by excluding such approaches, the paper suggests a way in which diverse perspectives can be incorporated and analyzed. Using three approaches to social development, the paper demonstrates the value of analyzing diverse cases from these three perspectives in order to better appreciate the strengths and weakness of each theory in relation to the cases.

Finally, the paper’s method of theory triangulation in social development is ultimately intended to demonstrate a method for case study researchers for broad application in ICT4D. Other researchers adopting this approach need not limit themselves to the three western perspectives outlined here but are encouraged to incorporate alternative normative perspectives that are drawn from knowledge traditions that are most relevant to the understanding of relevant practitioners and policy makers.

8. References


