IS INITIATIVES IN THE VOCATIONAL AND TECHNICAL EDUCATION SECTOR OF DEVELOPING ASIAN COUNTRIES: A SYSTEMS APPROACH TO THE MANAGEMENT OF PROJECT INTERVENTION PROCESSES

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ABSTRACT

This paper is set against a background of national IS initiatives implemented in the Vocational and Technical Education (VTE) sectors of developing Asian countries through donor agency funded projects, which can be seen as Project Intervention Processes (PIPs). This research is based on a six year research study of IS initiatives implemented in nine VTE sector projects covering Laos, Sri Lanka and Vietnam undertaken through empirical investigations and a review of secondary data. The IS initiatives that were studied focussed on aiding strategy formulation and management in the VTE sector as opposed to classroom based training. The research reveals that the process of managing PIPs using traditional project management theory, which is based on hard approaches, is problematic in terms of generating desirable outcomes from the IS initiatives to address perceived VTE problems. Soft Systems Methodology (SSM) is based on a learning/enquiring cycle and is often used to manage problem situations that are poorly structured. The paper presents two key findings: namely the nature, scope and problems faced by PIP based IS initiatives; and a SSM approach to managing PIP based IS initiatives.

Keywords: Asian Developing Countries, Management of IS Initiatives, Vocational and Technical Education, VTE, Soft Systems Methodology, SSM in Project Management, Management of Donor Projects

1. INTRODUCTION

The research questions of this study were twofold, in the context of VTE in developing countries: firstly, identifying management issues of IS based Project Intervention Processes (PIPs); and secondly making a contribution to the project management literature specifically in the area of donor agency funded projects. The research studied nine projects, three each in Laos, Sri Lanka and Vietnam. Each project was initiated by a sponsor domain (donor agency) for a host domain (Government institutes) in order to address a perceived Vocational and Technical Education (VTE) sector problem and could be viewed as a PIP. Each PIP that was studied targeted a multi-organisational VTE sector spanning central government institutions, provincial government institutions and VTE schools. Each PIP had a number of IS initiatives, each of which could be seen a sub-intervention. Each of these IS initiatives had a number of ‘Activities’ with ‘Expectations’ in terms of a ‘Response’ from the VTE sector and a set of ‘Outcomes’.

The observations from the research revealed that the process of managing PIPs was problematic and PIPs were not being managed appropriately to generate desirable outcomes
from the IS initiatives to improve perceived VTE problems. This research contributes to the theory of project management by applying SSM as an approach to the management of donor based IS projects in developing countries.

The presentation and interpretation of this research is structured into four major parts. Firstly the current state of the area of concern, VTE in Asian developing countries, is reviewed in terms of the literature and key problems highlighted. These provide the contextual setting for the implementation of IS initiatives through donor projects. The second part of the paper positions the research theoretically. In addition to the central concern of donor project management the research framework explicitly considers the use of SSM in managing project based IS initiatives as it provides a device to facilitate the management of complex project based IS initiatives. Part three details the research approach and the empirical design. Finally, part four presents the research outcomes and the interpretation of these together with some implications for ongoing research.

2. VTE in Developing Countries

The VTE literature is extensive but much is centred on areas dealing with education theory, the economics of VTE and ICT adoption in the classroom. In terms of VTE in Asian developing countries, traditional literature sources are limited and key sources are development agencies such as the Asian Development Bank (ADB), and World Bank (WB). The aim of the VTE literature reviewed in this research and summarized in this section was to better understand the nature and scope of VTE in developing Asian countries at a broad level. This in turn was expected to help provide the context to the specific literature dealing with the management of projects in developing countries.

2.1 VTE Nature and Emerging Issues

In the context of Asian developing economics, the VTE sector plays a pivotal role in meeting the human resource requirements of national economic development (ILO, 2002). The broad aim of VTE is to equip work-forces, in particular school leavers, for job opportunities across a range of labour markets brought about by industry needs (Middleton et al 1993). VTE comprises Vocational Training and Technical Education. Vocational Training broadly focuses on the preparation of ‘practical work skills’ to be used for the development of skilled and semi-skilled workers. On the other hand Technical Education focuses on ‘technical skills’ which are required by technicians. Numerous authors have developed taxonomies to provide a structure to VTE sectors (Pelgrum and Plomp, 1991; Ledgerwood and Kernaghan, 1998). However these tend to place a significant focus on activities at the classroom level. As the project based initiatives in this research were at a national level, a broader taxonomy was needed to provide relevant structure to VTE sectors. Following the review of VTE literature for the three countries studied in this research (Laos, Sri Lanka and Vietnam) the authors found that the VTE sectors can be conceptualised in terms of three core components:

2.1.1 VTE Policy Planning and Management

This component is responsible for developing sectoral strategies, allocation of resources, coordinating national programmes, monitoring major initiatives and assessing emerging sectoral requirements. This component is usually presided over by a central Government Ministry. It also involves a number of national authorities and regional departments for planning. In addition there are number of other government stakeholders involved in VTE planning such as: central Ministries handling national finance, planning, economic development; sectoral or ‘line’ Ministries responsible for areas like: construction, agriculture,
youth, tourism, industries, transport; and regional or provincial authorities with autonomy over certain training functions.

2.1.2 VTE Programme Development and Standardisation

This component is responsible for monitoring, developing and upgrading the content of VTE programmes. This covers areas such as: VTE curriculum development, instructional processes, Teaching and Learning Resources (TLRs), VTE standards, accreditation mechanisms, development of short-term programmes, apprenticeships and teacher training. This component is typically presided over by a specific Authority or Department under the Ministry responsible for VTE. Other important linkages include the Ministry in charge of Education, and ‘line’ Ministries in charge of developing skills in specific industry sectors.

2.1.3 VTE Delivery

This is responsible for delivering VTE programmes to the target groups. This component is made up of a network of VTE colleges across each country. The colleges come under a number of authorities including: some divisions of the Ministry responsible for VTE, sectoral Ministries and regional authorities. In recent years many Asian developing countries have undergone a skills gap in their labour markets (ADB, 1999b). In many instances the need for skilled workers has not been met and industry has lagged behind as a consequence. There is tremendous pressure on the VTE sectors to increase the number of people who receive employable skills. Asian Development Bank (ADB) studies conducted in Laos (ADB, 1996), Sri Lanka (ADB, 1999a) and Vietnam (ADB, 1998) conclude that the VTE sectors have the following major perceived problems: (i) are supply driven and not market driven; (ii) are without Labour and Education Management Information Systems (LMIS and EMIS respectively); (iii) have little or no program or institutional accreditation, or skill standards and testing certification (SSTC) mechanism; (iv) are faced with poorly trained instructors and educational managers; and (v) have VTE infrastructure, learning materials and instructors’ guides which are out-dated, and not related to the needs of local and national employer expectations.

2.2 IS Initiatives in VTE

Faced with perceived problem situations outlined above, many Asian developing countries have embarked on national initiatives to modernise their VTE systems to meet industry needs. These initiatives have been designed and funded by donor agencies such as the ADB, European Commission (EC) and the World Bank and been implemented through projects. These projects have provided the main technical and financial impetus for modernising the VTE sectors in Asian developing countries including the introduction of IS. These projects are implemented by a multi-organisational ‘host’ domain involving Education and Training Ministries, VTE agencies, Industrial sector Ministries, Provincial bodies, VTE Schools and private sector organisations. The projects range in timescale from between six months to six years and are major imperatives due to their financial scale, with projects sometimes over 100 million US dollars in size. IS initiatives have been important components of these projects. Typically these initiatives included Labour Market Information Systems (LMIS), Education Management Information Systems (EMIS), Financial Management Information Systems (FMIS) and Benefit Monitoring and Evaluation (BME) systems.

In terms of IS initiatives in the VTE there is a body of literature dealing with specific IS initiatives such as LMIS (dealt with by authors such as Sparreboom, 2001; ILO, 2002; Hopkins, 1999) and Learning Management Systems (dealt with by authors such as Commonwealth of Learning, 2002; World Resource Institute, 2002). However this literature focuses on the objectives and specifications of such IS initiatives as opposed to managing
these IS initiatives within project based interventions which is the focus of this research paper. The lack of relevant literature has meant that there is only a small body of knowledge to inform the practice of initiating and implementing IS initiatives through projects in developing countries. The ADB which is the biggest donor agency in the VTE sectors of South and South East Asia has recognised the limited success of implementing IS initiatives through its projects (ADB, 1999b; ADB, 2005). This research paper contributes to the literature gap by investigating the design and implementation of IS initiatives implemented through projects in the VTE sectors of selected Asian developing economies.

3. THEORETICAL FRAMEWORKS

3.1 Donor Project Management

The majority of innovations such as IS are implemented in developing Asian countries through Project based Intervention Processes (PIPs). Consequently the theory surrounding projects and project management is of significance to this research. Much project management theory is based on a ‘hard systems’ orientation, where problems are well structured. The projects involving IS initiatives in the VTE sectors of Asian developing countries are predominantly ‘soft’ driven poorly structured problem situations with a messy social context. An appropriate definition of a ‘soft’ project as applied to the context of international donor projects is provided by Friend (1998, pp 2) who defines a project as:

“An engagement of limited duration, negotiated amongst people representing varied programme strands in agent [consultant], host and sponsor domains.”

According to Crawford and Bryce (2003) key distinguishing features between donor projects and construction/manufacturing projects which are the major focus in the project management body of knowledge (PMBOK) of the Project Management Institute include:

- Project goals deal with social transformation/human development as opposed to “hard” implementations. Even aid projects with hard components are often a means to achieve some form of developmental end. This makes aid project performance measurement notionally complex
- Donor projects are inherently political as they create social, economic and environmental impacts. Thus they have a wide range of stakeholders which required high levels of accountability which requires complex reporting
- The operating environment of aid projects is often contextualized by issues which make traditional project management tools and approaches less appropriate. These issues include wide geographic distances between project actors (recipient country, contractors and funding agency), cultural differences between project actors, competing agendas between project stakeholders, technologically challenged operating conditions and unpredictable socio-political environments.

There is increasing concern in the literature about the relevance of project management theory and how it relates to the practice of managing complex, social, projects (Morris, 1994; Koskela and Howell, 2002). This can be attributed to the fact that the intellectual foundations of project management are largely based on hard systems thinking and systems engineering (Morris, 2002). According to Winter and Checkland (2003) much of current project management theory (such as the PMI’s PMBOK) focuses on the ‘process’ dimension of project activity, which is carried out through a predefined sequence of stages typically defined by a project lifecycle. This in turn would involve application of hard project management techniques. This implies that project management would focus on managing
‘technical’ processes such as ‘engineering’, ‘development’, ‘construction’ etc. The use of hard systems approaches are even more pronounced in IS projects in both developed and developing countries, which heavily draw upon such approaches as: the waterfall method, PRINCE, SSADM, critical path analysis and work breakdown structures (Checkland and Holwell, 1998).

The relevance of traditional project management theory to managing donor projects is even more inadequate (Morris, 1994; Friend, 1998). Donor projects are characterised by a heavy bias towards ‘soft’ situations involving poorly defined problems (ADB, 1999b and 2005; World Bank, 1998). They are often even more complex than soft projects implemented in developed countries as they have added stakeholder pressures brought about by international donors and expectations from a multitude of local stakeholders.

3.2 Soft Systems Methodology (SSM)

Many authors feel that soft systems approaches are better suited for project management specially when dealing with social or people based project situations (Morris, 1994; Winter et al, 2003; Checkland et al, 2005). According to Winter and Checkland (2003) the ‘soft systems’ view of managing projects focuses on the social process of ‘managing’ in complex situations and trying to cope with an ever-changing flux of messy situations and complex issues. According to Winter and Checkland (2003) in these messy project situations, the aims and objectives are generally the main problem as opposed how to achieve them. Here SSM has gained credibility amongst project management theorists (Morris, 2002) due to its emphasis on ‘learning’ about the problem situation and accommodating stakeholder interests rather than trying to solve a particular problem.

![Figure 1: Distinction between Hard and Soft Systems (Reproduced from Checkland, 1990, Figure A2)](http://www.ejisdc.org)

Soft Systems Methodology (SSM) emerged in the 1970s from an action research programme of Lancaster University. SSM is particularly well suited to messy project
situations with its emphasis on problem situations rather than well defined problems, different worldviews, models as devices for learning rather than prediction and consciously organised inquiry. SSM considers that the real world consists of complexity and confusion and hence the aim is to organize an exploration of it as a learning system. This distinction between hard and soft systems approaches to understanding the real world could be seen from Figure 1 (reproduced from Checkland 1990, A 11).

The scope of SSM has evolved to being an inquiring or learning cycle as summarized by Checkland (1990) in Figure 2. This learning cycle involves five principles (see Figure 2) which is based on a complex perceived problem situation or ‘content’.

![Figure 2: The Present form of SSM in terms of the Enquiring/Learning Cycle (Reproduced from Checkland, 1990, Figure A9)](image)

Checkland further adds that the current version of SSM is a ‘four activities model’ where the activities are as described in Figure 3.
Having reviewed a wide range of literature on SSM the enquiry/learning cycle behind SSM was applied to interpreting the research findings in terms of understanding the ‘problem situation’ surrounding PIP based IS initiatives, and the ‘five principles’ and ‘four activities’ for inquiring into such a situation. The specific SSM concepts and devices applied to the research and the manner in which they were applied are described further under the Research Approach section.

4. **RESEARCH APPROACH**

This research is concerned with investigating management issues of IS initiatives in the VTE sectors of developing Asian countries – an extremely complex social process that unfolds within each country’s context. In researching this area of concern, it is acknowledged that formal/rational and subjective/social aspects are important as this would reveal a rich perspective of the situation. In this paper, the belief is that the research questions must dictate the philosophical underpinnings of the research. Therefore, due to the need to abstract richness and the focus on social aspects, this research is underpinned through a phenomenological philosophy supported through the use of qualitative research methods. The engagement of such an approach is discussed in more detail below.

Checkland’s (1985) FMA model of research was adapted and used as the research approach to inform and guide the authors’ interventions in order to learn about an area of concern (A), using a methodology (M) and Framework of ideas (F). This is shown in Figure 4. Each ‘intervention’ was essentially a case study of a project intervention process, with a view to understanding and making recommendations for improvement. In using the FMA model, it is essential, as Checkland and Holwell (1998) point out, to declare in advance of the action, the elements F, M and A. In this research, these elements were:
- the **area of concern** A which was ‘IS initiatives in the VTE sector of developing Asian countries’ with a particular focus on Project Intervention Processes as a vehicle for IS implementation
- the **methodology** M which was based on: the learning cycle of SSM as illustrated in Figure 2 and live and retrospective case studies of projects in Laos, Sri Lanka and Vietnam
- the **framework of ideas** F which was the application of concepts embodied in SSM to project management theory, especially the concept of structuring the enquiry process as a learning system, the use of purposeful activity models as devices to structure discussion on PIPs relevant to IS initiatives and about propose feasible ‘changes’ to overcome such issues.

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**Figure 4: Research Approach**

The main issue in the design of the research was access to project actors and project literature due to the political sensitivity from donor agencies, host governments and consultants. Much of the access was facilitated through a research company involved in development work in Asia. Case studies were used as the main empirical tool and were designed based on the approach of Yin (2003). Nine case studies were identified based on access opportunities, three each in Vietnam, Laos and Sri Lanka. These case studies were on nine real world project intervention processes with IS initiatives undertaken in Vietnam, Laos and Sri Lanka. As part of a longitudinal process the cases involved a combination of
retrospective and live studies of real world projects. The retrospective case studies were on projects that had been completed at the time of undertaking the research. These case studies were developed through semi-structured interviews with key project actors and through access to secondary data in the form of the extensive project documentation. The live case studies were on projects that were ongoing at the time of undertaking the research. These live case studies were developed through the project documentation, interviews with all the project actors and the contextual observations of the researcher involved as part of the project team. Each country involved one retrospective case study, and two live case studies of projects. The interviews were conducted with key actors in each project from the sponsor domain, host domain and agent (consultant) domain. Each case study typically involved an interview sample of about 50 actors from the government host domain (including central government, provincial government and VTE schools), between 5 to 20 actors from the agent domain and 1 to 2 actors from the donor domain (ADB or the European Commission).

4.1 Approach to Case Study Analyses and Findings

The approach and logic to the case study analyses and the resulting findings is summarised in Figure 5. The approach consisted of 4 main steps. These steps are described further below.

4.1.1 Step 1

This step deals with the ‘finding out’ phase of SSM to understand the real world problem situation. Each case study was firstly narrated as part of the ‘finding out’ process implied by SSM. This narration was done ‘as is’ without any systems or theoretical analysis and was based on the project documentation reviewed and interviews undertaken amongst key project actors. Secondly, following the narration SSM based analyses was undertaken to interpret the problem situation.

The real world narrative consisted of three components. Firstly the historic background to each project was developed. Secondly a profile of the project intervention was developed in terms of the perceived problem situation, as defined by the donor agency, and the IS initiatives to address the problem situation. This was done in order to understand the nature of the overall PIP and its relevance to the specific VTE problems. Thirdly each of the IS initiatives in the PIP were described in terms of their key activities, donor ‘expectations’ from the activity, the actual ‘response’ to the activity by the VTE actors and the outcome. This was done to identify the donor expectations and the actual project results for each IS initiative.

Various literature corresponding to SSM indicate that in order to gain insight into the “problem content” under consideration four distinct types of analysis could be done (Checkland 1986; and Checkland and Scholes 1990). These four analyses and the manner in which they were applied to the case studies are described below:

(i) A ‘rich picture’ based analysis of the ‘situation’ surrounding each project intervention studied.
(ii) Interpreting the nature of each project intervention process (PIP) under study in terms of a role profile of those involved in the project by undertaking an SSM based Analysis One of each PIP by the author. This is a modified application of Analysis One, which is normally applied to the research intervention itself.
(iii) An analysis of the social background of the situation in each country studied in the form of an Analysis Two.
(iv) A political analysis to understand the disposition of power in the country situation studied in the form of an Analysis Three.
The ‘finding out’ phase revealed that the initial problem situation in the VTE sector of each country was perceived largely by the sponsor domain with agreement from the host domain. For all three countries studied the problem situation included poor VTE sector commissions action to tackle the problem via a ‘project’. Organised as a project which is temporary and resourced by selected external experts together with host government participants. The project group plans and intervenes in the problematic situation to bring about the desired improvement based on expectations of the sponsor and host government. This is conceptualised by the researcher as a “Project Intervention Process” (PIP).

**Figure 5: Logic of Case Studies and Resulting Findings**

The research domain is the PIP and its role and effectiveness in tackling the broad problematical situation identified by the sponsor and the host government.

**Step 1:** Finding out about and interpreting the Real World using a real world narrative and SSM analysis

**Step 2:** SSM Modelling (1) of Individual Cases

- Individual Case Findings
- Common findings across cases: F1 + F2 + F3 + etc
- New Problematic situation centred on conceptualised notion of PIPs

**Step 3:** Cross case analysis

- Primary findings: SSM Modelling (Loop 2) compares conceptualised PIP process with the actual project process in relation to the PIP problem situation

**Step 4:** Learning

- Learning about process of managing of PIPs with IS initiatives

Part 4: Learning
quality, relevance and management capacity. Based on the perceived problem the sponsor (which in the cases studied was either the ADB or the EC), together with the host government, designs and commissions action to address the perceived problem situation. The action is organised as a set of initiatives in a ‘project’ which is temporary and staffed by selected local and international experts together with officials from relevant Government agencies to effect the desired changes to VTE. Relevant IS and non-IS initiatives are designed with specific expectations, as part of the project brief, to address the perceived problem situation in each country and contribute to the improvement of the respective VTE sector. The project is then financed by the sponsor domain either in the form of a Grant or Loan Project. This is the standard mechanism for the design of Technical Aid projects in the VTE sectors studied. The project group plans and intervenes in the problem situation to bring about desired improvements based on the expectations of the sponsor. This action and overall process is conceptualised by the researcher as a PIP. The domain of research focus from the real world was the nature of the PIP and its effectiveness in tackling the broad problematical situation identified by the sponsor and the host government.

4.1.2 Step 2

The second step to the case study analysis approach deals with the application of SSM to develop purposeful activity models. SSM based modelling was applied to the real world findings from the case narratives to generate structured debate by the author about the problematical situation surrounding each project intervention studied.

Each PIP was analysed by identifying a number of relevant purposeful holons and developing Root Definitions and Conceptual Models. A number of relevant Root Definitions (RDs) were developed based on the world views of the key project actors. The structure of each Root Definition was tested using the CATWOE review of SSM (Checkland and Scholes, 1990). The most relevant RD was then selected by the author based on the verifications provided by key project actors from interviews and a Conceptual Model of this RD developed. By continuing the application of SSM, the Conceptual Model from each case were compared by the author with the respective rich pictures from each case in order to debate the management issues that can be learnt from each PIP and propose feasible changes.

4.1.3 Step 3

The third step in the case study analysis deals with a comparison of findings, emerging from the conceptualised notion of PIPs, across cases both within each country and across countries. These process based findings revealed that a new problem situation arose as a result of the respective projects initiated by the sponsor and host domains. Relevant Human Activity Systems in SSM terms were developed of the conceptualised notion of a PIP process. These included Root Definitions (RDs) and Conceptual Models (CMs). A debate was then generated by comparing the models of the conceptualised PIP process with the actual project process that took place. These issues were developed further in SSM terms in the form of suggested feasible changes which would improve the management of PIP based IS initiatives in the VTE sector.

4.1.4 Step 4

The fourth step of the approach deals with the learning that emerged from the findings. The findings presented in this paper focuses on learning about the process of PIP initiation and management. This learning emerged as a result of the debate from the cross case findings comparing the models of the conceptualised PIP process with the actual project process that took place.
5. **RESEARCH FINDINGS**

Three key themes have emerged from this qualitative research on project based IS initiatives in developing countries. Firstly is a SSM based conceptual interpretation of a project with IS initiatives. This provides insights into the nature, scope and problems faced by project based IS initiatives. The second theme deals with the process of managing PIPs with IS initiatives. The paper presents a SSM based process for managing PIP based IS initiatives in terms of a generalised conceptual activity model based on the nature and scope of work involved in a PIP and the developing country project management literature. The activities from this activity model are socially and politically feasible according to the understanding gained from the soft systems based social and political analyses undertaken in the research. Thirdly the paper recommends the procedures which need to be accompanied by each activity in the conceptual model for managing PIP based IS initiatives. These recommended procedures accommodate the different interests and requests from the different stakeholder domains (host, sponsor and agent domains) involved in the PIPs to facilitate the implementation of IS initiatives in developing countries through donor funded projects. The findings relating to these themes are described further below.

![Figure 6: Interpretation of a Project Situation in VTE in SSM terms](image)

**5.1 Theme 1: Interpretation of Project with IS initiatives in VTE in SSM Terms**

An important outcome of the case studies across the nine projects is the visualisation of the project initiation and implementation processes studied in terms of SSM. The VTE sectors corresponding to project situations were situations regarded by many VTE actors as problematical. The host domains and sponsor domains designed projects to bring about ‘improvement’. These parties who initiated projects also had consideration through ‘whose eyes the improvement is to be judged’. In these terms the project situations studied all met the conditions of an ‘intervention process’ specified under SSM. Therefore the projects that were studied were ‘project intervention processes’ (PIPs) to bring about ‘improvement’ to the
corresponding VTE ‘problem content’. This interpretation of projects studied under the cases in SSM terms could be visualised in Figure 6.

It was found that the project intervention processes carried out by a host domain, sponsor domain and agent (consultant) domain are themselves problem situations in terms of SSM (Checkland, 1991). The interventions were situations in every day life which were regarded by those involved in the interventions themselves (from the host, sponsor and agent domains) as problematical and required improvement. Hence the project-based-cases that were studied in this research even though intervention processes introduced in order to improve some perceived VTE problems were themselves problematical, leading to a new problem ‘content’.

Figure 7: Projects as Intervention Processes Trying to Improve Some Perceived VTE Problem Area

According to the nature of the actual intervention processes learnt from the cases the PIPs involved four major tasks: 1) ‘initiating’ of a project; 2) ‘managing’ initiatives of the project (including IS initiatives); 3) facilitating project activities by ‘administrative support’; and 4) complemented by ‘terminating action’ which culminates in the end of the project. In real world project contractual terms the task of initiating a project is outside the intervention process. However from the cases it was observed that the task of ‘initiating’ which defines the project interventions and role players is mostly problematical. Hence in trying to see ways and means of improving project interventions in general and IS initiatives in particular project initiation needs to be taken as part of the overall process. It was observed that managing initiatives involves: 1) action to be taken by the Agent Domain; 2) follow-up action
and decisions to be taken by the host domain; and 3) ensuring expected outcomes are met. On the other hand administering support is based on: 1) action to support project interventions; and 2) action to meet procedural requirements of sponsor and host domains. Terminating action consists of: 1) action for sustainability and follow up; and 2) Action to wrap-up project activity and transactions. The projects as intervention processes with these major tasks could be visualised as in Figure 7.

![Generalised Conceptual Model (CM) of Managing a PIP with IS Initiatives](image)

**Figure 8: Generalised Conceptual Model (CM) of Managing a PIP with IS Initiatives**

### 5.2 Theme 2: The Process of Managing PIPs with IS Initiatives

In trying to reflect on ways of improving project intervention processes with IS initiatives in the VTE sector SSM based thinking was used to understand the problem situation in terms of
the generic rich-picture of the intervention process presented in Figure 7. For this purpose the insight gained from the application of SSM concepts in terms of Role Analysis (Analysis One), Social Analysis (Analysis Two) and Political Analysis (Analysis Three) of cases was also taken into account. For this purpose a number of Root Definitions were developed taking Project Intervention Processes from different perspectives and view points such as a system: 1) enabling to enhance relevance of VTE programme to skills needed; 2) instigating Government action to improve VTE efficiency and effectiveness; 3) providing relevant opportunities for a Government, a donor, consultants and other stakeholders. Finally a ‘root definition’ capturing more than one such view was crafted as given below:

A government host domain, sponsor domain and agent domain collaborative system to instigate Government action to improve efficiency, effectiveness and efficacy of the VTE sector by initiating and managing an intervention process with IS initiatives.

For the purpose of generating a debate which could improve the situation of PIPs a purposeful holon or human activity system capturing the notion implied by the root definition was developed. This notional system captures some important essence for proper functioning of PIPs which is currently missing or implicit and responsible for its problematical nature. A Conceptual Model as shown in Figure 8 was developed for this debate.

This general conceptual model of PIPs with IS initiatives was compared with the actual situation that existed in the 9 PIPs studied in the cases. The comparison revealed that the activities exist only in some rudimentary form without the vigour required. It was also found that there is no close collaboration, cooperation and coordination among host, sponsor and agent domains when undertaking these activities for managing PIPs. These could be seen as major reasons for PIPs to be problematical as at present.

In the PIPs studied the initiating phase is highly dominated by the donor agency who designs the PIP in a prescriptive manner. ‘Managing’ a PIP is not taken adequately as a joint collaboration between the host and agent domains. The agent (consultant) undertakes their components according to their TORs (terms of reference) whilst expecting the Government host domain to contribute their part in terms of effecting change within the VTE sector. The sponsor reviews progress typically in a ‘detached’ style through quarterly or bi-annual missions. Currently collaboration and participation is missing at all levels. The absence of these key management activities in this vigorous form could be seen as the reason for the problematical nature of these PIPs with IS initiatives.

5.3 Theme 3: Procedures for Managing PIPs with IS Initiatives

As discussed in Theme 2 of the research findings, a PIP should be defined as an effort involving collaboration by host, sponsor and the hired agent instigating host action to improve efficiency, effectiveness and efficacy of the VTE sector within the scope of the most suitable initiatives and resources available. Managing a PIP is thus the process of ‘ensuring such collaborative effort amongst these tripartite domains (sponsor, host government and agent consultant) to improve the perceived problem situation of a VTE sector utilising the best suited initiatives within available resources’. This implies that the initiatives to be included in a PIP should be determined carefully having learnt the nature and scope of the problem situation with active participation and collaboration of all stakeholders.

In trying to formulate some changes or improvements to the existing PIPs, the observations from the comparison were reviewed in the light of the findings gathered from the Social Analyses and Political Analyses corresponding to each case. Having considered the social and political sensitivity some contributions could be made to improve PIPs in the VTE sector. These changes could be used in the real world as they present an
‘accommodation’ between different interests of role players in PIPs. The activities of the proposed conceptual model for managing PIP with IS initiatives were thus further developed using SSM concepts by indicating procedures which need to be accompanied by each activity. These recommended procedures accommodate the interests and requests from the three main domains involved in the PIPs (sponsor, host government and agent or consultant). The suggested procedures with necessary ‘accommodations’ are presented in Table 1.

<table>
<thead>
<tr>
<th>Activity of the suggested process</th>
<th>Procedure with suggested changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learn jointly about VTE Problems of priority</td>
<td>VTE problems need to be understood with a learning process involving open investigation of the VTE situation by the stakeholders of the host domain together with the Project Officer. A participatory approach taking different values, views and interests is suggested. This learning process should be detached from possible initiatives to be used.</td>
</tr>
<tr>
<td>2. Identify a PIP and initiatives most Appropriate</td>
<td>It is suggested that the PIP most appropriate to suit the problem situation understood from the earlier mentioned learning process should be identified by a working team of the donor staff and Government Officials (GOs). This could be done whilst considering priorities of the Government and sectoral policy of the donor agency so that the different interests of both parties are accounted. Initiatives to be included in a PIP should be determined once jointly with some agent guidance. This should be only after the Government agrees to the scope of the proposed PIP and its justification (what and why).</td>
</tr>
<tr>
<td>3. Define Role Profile for Collaborative Action</td>
<td>To implement a PIP and generate desirable outcomes to address VTE problems would require a major role to be played by the Government Officials (GOs) who need to feel that the innovations based on initiatives are developed with their close participation using technical guidance of the agent domain. The GOs also need to play the key role of decision makers. The Role Profile should give priority to these needs. This requires a great deal of accommodation emphasising the importance of the role of GOs and modifying TORs to insist that the role of the agent domain is to provide technical guidance and facilitate government action.</td>
</tr>
<tr>
<td>4. Provide Agent guided Action with Stakeholder Participation</td>
<td>Agent guided action to develop and introduce various innovations utilising initiatives (including ICT) is critical for the success of a PIP due to lack of technical capacity of GOs. But this development work should not take place in isolation of GOs and other stakeholders. As some subsequent work is to be undertaken by the GOs, they should be closely and continuously involved. Both the host domain and the sponsor domain must ensure that these interests are accommodated to both project guidelines and their real-world practice.</td>
</tr>
<tr>
<td>5. Encourage Government Action and Decision Making</td>
<td>For PIP and its initiatives to bear desirable outcome GOs must play their role of decision making and action appropriately. Hence agents should clearly demonstrate action and decision making expected from the Gos and both the Agents and Government Project Managers/Directors need to ensure that the Action and decision making by the GOs are done as required.</td>
</tr>
</tbody>
</table>
6. Collaborate action to ensure expected outcomes

Collaborative efforts to ensure expected outcomes should be encouraged by total coordination of efforts of technical guidance of the agent domain with decision making and action of the GOs. This should be seen as one well integrated process of teamwork between Agent and host domains.

7. Monitor continuous progress as a joint collaboration

Monitoring should be directed towards achieving desirable outcomes of the PIP with various initiatives as a joint venture involving different domains rather than finding weaknesses of each party. The Agent domain should monitor the progress of action and decision making of GOs by assessing their response continuously. Similarly the Government should monitor the progress of the agent domain to ensure collaborative joint efforts are taking place to improve VTE problems rather than merely preparing reports. Sponsor domain needs to accommodate these requirements into PIP management procedures and ensure they are practiced in the real-world.

8. Provide Administrative Support for Initiatives

Administrative support should facilitate initiatives to develop their innovations and to implement them on schedule. Especially long delays in commencing a PIP should be avoided to ensure the consultants are available at the time of requirement as originally planned and scheduled. Support function also should facilitate coordination of different consultants whose inputs and outputs are closely interconnected.

9. Take Procedural Action

The contractual obligations between host, sponsor and agent domains require efficient procedural action. This also should be considered as a process for transparency in project management. These procedures should be based on the requirements specified by the Government and the donor. Accommodation is required to minimise delays due to conflicting procedures of the Government and donor and to reduce bureaucracy.

10. Ensure Sustainability of initiatives

The Agent domain needs to incorporate measures for sustainability as part of the action. Also transfer of skills, competencies and technology by the agent domain by working closely with the GOs should be encouraged to ensure sustainability of initiatives brought in by a PIP once the consultants leave.

11. Take action to wrap-up PIP

This procedural requirement should involve smooth handing over of reports, databases, software, equipment etc and should be undertaken jointly by the GOs and Agent domain with the guidance of the sponsor domain. Adequate documentation from the part of the agent domain is required for the usage of innovations including databases by the host domain.

| Table 1: Suggested Accommodations and Changes for Improving the Management of PIPs |

6. CONCLUSION

Since PIPs are aiming to address some problem content of VTE sectors, the systems based study of PIPs not only facilitated understanding their problematical nature in terms of management but found PIPs as a worthwhile vehicle to comprehend the problems faced by IS initiatives applied to VTE sectors in developing countries.

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The application of a universal hypothesis for administrative science has been endorsed by major development agencies such as the ADB, World Bank and IMF by applying traditional project management theory in the management of IS projects in developing countries. However, as Lubatkin et al demonstrate the application of this universal hypothesis can have very limited roles in the management activity of developing countries. The research undertaken demonstrated the complexity of VTE sectors in developing countries with their complex organisational context and ‘extra-soft’ problem content involving difficult to structure problem situations. The research revealed that it is an extremely difficult task to manage project or PIP based IS initiatives by applying the traditional hard approaches of project management used in developed countries. A softer approach to managing IS projects is proposed by the authors using the enquiring/learning cycle of SSM. A conceptual model of the process of managing PIPs was developed. The recommended activities in the model accommodate the different interests and requests from the different stakeholders involved in the PIPs.

7. REFERENCES
Commonwealth of Learning (2002) Perspectives on Distance Education: Skills Development through Distance Education, Vancouver: Commonwealth of Learning.


