PRACTICE RESEARCH DESIGN - A CHANNEL TO THE MEANING OF BPM MATURITY IN GOVERNMENT

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Abstract

This paper describes a practice research design for studying the practical meaning of business process management (BPM) maturity in municipalities within a university course. The course design enables the identification of practitioners' 'questions' (needed knowledge in BPM), actions and business issues (problematic situations). Applications from practitioners' everyday work are used as case studies in course assignments. Thereby, it will be possible to collect empirical data to be used in the research, as well as to collect, answers and provide discussions that will give useful perspectives, concepts and methods contributing to changes (interventions) in the local practice. Moreover, it will be possible to conduct practical inquiries to develop a general knowledge of practical relevance and usefulness among course participants. The practitioners are interested in the same practical scope, i.e. BPM initiatives with process mapping as the first step. In the course a generic process methodology (the PoP model) serves as a knowledge transfer from ten local practices and is improved upon the course participants as a joint result of the knowledge development and a general practice contribution. The model can be adjusted by each practitioner's own business context in use and thus is in everyone's interest to share lessons learned.

1 Introduction

Business Process Management (BPM) is a management practice for business performance. The practice includes identifying, describing, measuring, analysing, designing, improving and monitoring business processes (Rohloff, 2009). The process modelling, as well as the operational business process improvement, organisational implementation and leadership, happens at the same time and must work 'hand-in-hand'. The business process maturity can be described as degrees or levels of implementing BPM in organisations. Although this is a well-known approach in research and with some applied maturity models (in e.g. Rohloff, 2009 and Neubauer, 2009), there is still work to be done, besides the resent study of Ganesan (2011), to develop normative knowledge on how governments/organisations best perform the implementation of BPM initiatives and increase their BPM ability to get it working. Hundreds of BPM maturity models exist (Spanyi, 2004) in different domains such as software development, product development, acquisition and personal development (Rohloff, 2009) as well as knowledge management and enterprise architecture topics (Ganesan, 2011). However, in some Swedish municipalities, BPM practice is still in its infancy when working towards a process oriented view of business operations in e.g. providing, performing and delivering e-Service solutions. BPM maturity should work 'hand-in-hand' with process methodologies to guide organisations on actions to be planned, taken and managed, as well as identifying the required skillset to achieve the appropriate maturity. BPM as a discipline needs both studies in theory and in practice in different business contexts to learn how people conduct process mapping, measuring, improving and monitoring in a practical sense. Thereby, practice research concerning questions arising in governments is important to be able to define acquired skillsets, activities, responsibilities and management (roles) to support BPM. With a more in depth knowledge of BPM in practice, researchers are able to support BPM

initiatives with relevant and useful methodologies, as well as appropriate evaluation criteria in BPM assessments according to actions at hand and peoples ability to work in a process oriented manner.

There is a growing recognition that research in professional practices needs approaches to adapt methodologies so that they are useful and used. The purpose of this paper is to elaborate practice research in terms of using a practical inquiry strategy in the design of a university course. The course will be the work practice when it comes to the ability to learn the basics in process orientation and process modelling, as well as a channel (empirical data collection) to explore the meaning of BPM maturity in local practices. The paper will examine in what way the university course can act as a work practice and how practical relevance can be ensured in a practical inquiry concerning BPM maturity.

2   BPM Initiatives in Government

BPM initiatives are increasing in municipalities for a number of reasons, e.g. the European Commission missions towards the Digital Agenda for Europe (European Commission, 2010a) and a new generation of open, flexible and collaborative e-Government services. E-Government, as an instance of e-Commerce (Schneider, 2003), provides e-Services in administrative processes for their customers (citizens, visitors, companies and other government agencies) through web sites. Wider deployment and more effective use of digital technologies will provide Europeans with a better quality of life through better health care, safer and more efficient transport solutions, cleaner environment, new media opportunities and easier access to public services and cultural content. The Action Plan for 2011-2015 (European Commission, 2010b) identifies four political priorities; to empower citizens and businesses in need of services; enable efficiency and effectiveness by reducing the administration; facilitate mobility for setting up a business, studying, working, residing and retiring in Europe and to create the necessary key enablers and preconditions to make these things happen. Well-structured and effective business processes are prerequisites in providing, performing and delivering e-Service solutions in government (Christiansson, 2011).

A process oriented approach in e-Services means, for instance (based on e.g. Davenport, 1993; Hammer, 1993; Grönroos, 2000):
- Ensuring that the purpose and objectives of a business process are linked to the goal of the organisation.
- Basing the mapping on the knowledge of people who know the business operations in question and on those who have expectations for it and are affected by its result, that is, a focus on how citizens' and companies' services are performed and how they deliver value.
- A holistic view on end-to-end processes, adding significant value for an external customer's experiences and results in services.
- Considering and describing operations horizontally from the point at which an customer makes some kind of request which leads to a number of tasks being performed in a logic flow (in and between organisations) in order to meet the request.
- Proceeding from the user/users perspective of the result, identifying value-creating tasks (what) and work procedures (how) that will satisfy the user and ensure a tangible value (e.g. an effective and useful e-Service).
- Identifying and describing available resources and enablers in terms of e.g. IT for use and requirements in business performance and service delivery.
- Ensuring that employees can identify their roles in the process flow and serving as the basis for their understanding and ability to improve business processes.

Karlstad municipality is an organisation with around 7 000 employees performing services and business operations to attract both people and companies to work and live in the city. Employees with various process orientation and modelling skills need support with applicable hands-on knowledge in a lightweight manner. The process mapping maturity in administrations varies from drawing and

documenting 'processes' (more or less a business process by definition) to process modelling and the use of advanced process tools, combining business views of the e-Service solution and the system architecture. (Christiansson, & Karlsson 2011)

Communicating knowledge of business operations is important in all development work. To achieve this, it is necessary that those who partake in development and those who need to explain understand and make decisions speak 'the same language'. Across organisational boundaries, there is a shared obligation to meet the needs of citizens and companies in the municipality. Concepts and process descriptions must be understandable in and between organisations, as this can become a national and international need, as well as when developing e-Services across national boundaries. Working uniformly in a development project in and between organisations makes the work more effective and increases the chances to communicate and spread information. The opposite scenario, where process mapping is done differently means that a great deal of reworking by the same people using different tools might be necessary, and this requires resources and consumes energy. To use a common process methodology based on critical modelling factors and an explicit BPM maturity model is one course of action to avoid major pitfalls (see e.g. Rosemann 2006a; 2006b).

The cooperation between Karlstad University and Karlstad municipality started in December 2008 as partners in the Smart Cities project (SmartCities, 2011), based on a common interest in process oriented driven business and system development. We have together been formulating questions to be studied and are investing in knowledge development and value creation. Besides formulating the point of departure, both parties have been contributing, delivering results and evaluating the co-production process (as suggested by e.g. Orr and Bennett, 2009) in developing a lightweight process methodology, the PoP model. To be able to realise an effective business development supported by useful process descriptions, the PoP model can be used with explicit preconditions, concepts, directives, guidelines, templates and roles to create a common platform for how to think, describe and work towards process improvements and e-Service solutions (Christiansson & Karlsson, 2011; Christiansson, 2011). The main objective is to support employees in creating useful process descriptions in an effective business development. The university's role in the co-production is to provide research results, to offer hands-on support, to qualify good practices and to accurately translate project pilots into transferable good practices.

To gather knowledge and experience in e-Service development, the municipality created a virtual organisation called the e-Office. The task of the e-Office is to coordinate and support the development of e-Services in the municipality in order to offer more and better services to citizens and companies. With a knowledge management approach utilised by the e-Office, there is an increasing in collaboration, learning and sharing, allowing administrations to work at the pace they prefer. The university and the municipality are working closely together with direct contact between the researcher and the e-Office (mail, telephone, local web-based project management tool and transnational wiki for the Smart Cities participators').

Interventions between researcher and practitioners are performed in several meetings (informal and with a common interest to solve the same problem) with employees from different areas and in different roles from management, business development and e-Service development. The municipality is continuously describing their business needs and the BPM agenda at hand. To increase basic skills in process orientation and process modelling, employees in key process roles (mainly from the e-Office and the Technical services and property management administration) study the basic level university course "Process Orientation in Practice". It is comprised of a flexible campus and/or distance course over the course of one year (approximately 5 study hours per week). The participants have the opportunity to work with course assignments in their own business context (local practice), learning from theory, using the PoP model, and by experiences in use and findings when applying the theory contribute to further improvements and the development of the PoP model. The relationship between the researcher (teacher and supervisor in the course) and practitioners (course participants) can be describe as a mutual interest in the question; "How do we get process modelling to happen in practice?" The answer is what it takes to get BPM working in terms of producing usable and used

process descriptions as basis for business development (e.g. e-Service solutions), i.e. the practical meaning of BPM maturity, is crucial.

3   Practical Inquiry in Practice Research Design

The action research approach contributing to changes in a local practice, involves solving organisational problems through intervention and at the same time contributing to research (Benbasat et al. 1987; Davison et al. 2004; Goldkuhl, 2010). Action research serves local practice, as well as, the research community to ensure practical relevance in research (Goldkuhl, 2010). Strengths in this research method are the insider's view as a participant to obtain an in-depth and first hand understanding of local practice. Weaknesses are the potential lack of objectivity, since the observer is also involved (lack of distinction from consulting), and the potential for its two objectives affecting the outcome for the participating organizations (action with little research, i.e. lack of rigor) as well as the generalised research contribution (research with little action, i.e. lack of relevance). Consumable research demands both rigor and relevance (Robey & Markus, 1998). The practical inquiry contributes to general knowledge of practical relevance and usefulness for organisations as a prime concern and objective (Goldkuhl, 2010).

A practical theory is more or less general and provides a way to transfer practical knowledge from one local practice context to other practices within a practice scope (Goldkuhl, 2010). In the PoP model general this is conducted by conceptualisations on e.g. concepts, roles and perspectives. Building blocks in the PoP model (as well as in the adjusted Common Process Model in Karlstad municipality described in Christiansson & Karlsson, 2011) entails agreement on basic ideas of and values in a process oriented approach – meaning and impacts to be achieved, central concepts, actions to take regarding to the degree of BPM maturity, necessary roles in organising and performance and functionality in tools, as well as a recommended modelling structure supported by directives, guidelines and templates. Goldkuhl (2010:9) stresses the fact that a model means, "... illustrative crystallizations of a practical theory aimed as analytic instruments when applying the theory". A model may guide its users (researchers or practitioners) to observe, understand, analyse, evaluate and redesign phenomena within practices.

The abstracted results and formulation of scientific knowledge as a result of practical inquiries should be presented in ways that this knowledge is relevant and useful for practices outside the studied local practice (Goldkuhl, 2010). In the university course, as well as in the cooperation between Karlstad University and Karlstad municipality, the PoP model is the tool to collect data and present results in the joint knowledge development. In Table 1, the influences from Action Research (by e.g. Benbasat et al, 1987; Avison et al, 1999; Baskerville & Myers, 2004) and Practical Inquiry (by Goldkuhl, 2010) are described.

Characteristics	Action Research	Practical Inquiry	Research Design
Relation between research and practice	Research informs/helps practice and practical actions informs research	Research benefit to study a local practice and give something in return to the local practice	Research and practice cooperate in data collection and knowledge development
Purposes	Contributing to knowledge and changes in a local practice and to the scientific body of knowledge	Contributing to general practical knowledge as part of the scientific body of knowledge	Contributing to knowledge in local practices and general practical knowledge as part of the scientific body of knowledge
Domain	An immediate problematic situation within a mutually acceptable ethical	Practical matters in local practices	Problematic situation and practical matters in local practices and the course work practice

	framework		
Process	Problem diagnosis, action intervention, and reflective learning	Practical matters, include intervention, of varying degrees, into the studied local practices	Practical matters, include intervention, of varying degrees, into the studied local practices
Emphasis	What practitioners actually do	What practitioners actually do	What practitioners say they do and what they actually do

Table 1.   Influences to the research design in the university course

This means that the results of the applied theory in the course assignments (performed in local practices) is probably not relevant for all organisations but for those practices which are fairly alike the one studied. When it comes to BPM initiative and process maturity in government, the course participant has an interest but may have different experiences in working on processes in their daily work and with more or less time and responsibilities in process roles.

3.1   The University Course as a Work Practice

The university course aims to address the basics in process-oriented business development. Central process concepts, purposes and possible effects of process orientation will be addressed. Particular focus is paid to different ways of thinking about business processes, procedures and working to identify, understand, communicate and improve business processes. The course provides students with the opportunity to reach and develop the ability to improve business operations and information systems. Linkage between business processes, information systems and IT-solutions with benefits to management, employees as well as the customers is central to the course. Different motives for process modelling and the use of process descriptions are dealt with in practical applications in which the course participants own daily business/business case can be used.

Upon completion of the course, students should be able to:
- Explain the purpose of process orientation and the meaning of business process.
- Give an account of the relation between organisation, business process, information system and IT in business modelling.
- Explain how mapping and modelling processes can accommodate different roles and different perspectives of the business in organisations.
- Identify different degrees of process maturity in organisations.
- Identify and understand models, methods, work modes and tools to map, understand and improve processes.
- Discuss the prerequisites for useful and used process descriptions.
- Give an account of and evaluate the effects that a process oriented business development might generate.

Learning outcomes in the course can be connected to 'steps' in a 'process staircase' (Christiansson, 2001), illustrating phases when increasing the degree of process orientation in an organisation. The learning outcome "Identify different degrees of process maturity in organisations" is directed towards the practitioners' own local practices.

The first step, mapping processes, entails identifying and describing processes. A process modeller needs guidance at different points in the process modelling process, in different roles and with different levels of competence in modelling. A useful process description will be a result of a process mapping describing a business process with its elements, customer focus and a horizontally view of business. An understanding of the basic ideas in and purpose of process orientation, as well as the meaning of business process is crucial to the ability to identify and describe a business process. The

relation between organisation, business process, information system and IT in business modelling is necessary to explain how mapping and modelling processes can accommodate different roles and different perspectives of the business in organisations.

The second step, establishing processes, can mean labelling the identified processes, and saving and storing process descriptions to make them available to the appropriate people. It can also mean allocating responsibility for administering process descriptions. The idea in the municipality case is to store one core process description, which can then serve as a basis for different users, roles and target groups. A core process description will allow for measuring and improving business processes. It can also be copied and modified across administrations to be useful for e.g. different target groups/roles and multiple perspectives, as well as for people who don't 'think in boxes and arrows'. An established process will have a suitable name 'close to its purpose in business' according to a convention easy to store, find, publish and access. To identify and understand models, methods, work modes and tools to map, understand and improve processes is knowledge to be used in establishing processes as prerequisites for useful and used process descriptions as well as evaluating and improving processes.

Evaluating and improving processes, as the following step, can be based on measuring points and quality indicators identified in descriptions of the current situation in order to clarify what is needed to move in the direction of a goal objective. The analysis of processes can take place based on internal or external demands on performance and quality. An evaluated process will have suitable and defined indicators to support e.g. business process comparisons and improvements. A useful process description describes a business process with elements to measure (what) and relevant measurements (how) based on the use of process description as well as motives for the evaluation (why).

Monitoring processes, the last step, means that employees and systems know how the operations work and are related to the whole. This step presupposes a horizontal view of management and control, which allows employees to be able to, and have the authority to make decisions on how and which tasks contribute to value. A useful process description in this step is most likely automated and supported by a tool to prioritise and signal what to act on. The course participants will be able to give an account of and evaluate the effects that a process oriented business development might generate.

The process staircase is a maturity model focusing on the degree of process orientation in organisations (a brief definition of the steps above as its beyond the scope of this paper) based on empirical findings (Christiansson, 2001; Christiansson & Karlsson 2011; Christiansson, 2011) and may in its further development include dimensions in the coverage of BPM presented by Rosemann and de Bruin (2005); number of processes included in BPM practices, staff involvement/level of staff undertaking BPM activities (response to issues and initiatives as well as frequency of conducting BPM activities) and links to other management tools (i.e. initiatives and suitability of BPM tools, resources and practices). Further more, Rohloff (2010) cover aspects that impact the success of BPM within an organisation; process portfolio and target setting system, process documentation, process performance controlling, process optimisation, methods and tools, process management organisation, program management, qualifica-tion and communication, data management and IT architecture. Even more detailed from a practitioner's viewpoint is Ganesan (2011) relating to enterprise wide process modelling maturity in the Composite Enterprise Process Modelling (CEProM) framework with seven major components (and detailed subcomponents): motivation, governance, modelling and architecture definition, tool administration, library management, stakeholder management and stakeholder training. Conclusions from this brief overview of BPM maturity models for maturity in organisations show the importance of a detailed description of questions/deliverables to be handled and solved when dealing with number of challenges that practitioners must face. Tregear (2010) suggests a set of key BPM questions to guide our thinking, writing, analysis and development activities. Moreover, zur Muehlen (2008) illustrates levels of BPM skills according to Bloom's (1956) taxonomy and typical questions to solve. Inspired by zur Muehlen's approach, a revision of Bloom's taxonomy by Anderson & Krathwohl (2001) into cognitive domains (which reflects actions and thus better suits BPM maturity) can be used to represent the skillset needed in BPM:

Remembering (R) - defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognises, reproduces, selects, states,

Understanding (U) - comprehends, converts, defends, distinguishes, estimates, explains, extends, generalises, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarises, translates,

Applying (AP) - applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses,

Analysing (AN) - breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates,

Evaluating (E) - appraises, compares, concludes, contrasts, criticises, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarises, supports and

Creating (C) - categorises, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organises, plans, rearranges, reconstructs, relates, reorganises, revises, rewrites, summarises, tells, writes.

Combining the approaches of BPM maturity steps, coverage, success factors, components, questions and cognitive domains can be helpful in identifying the required BPM actions and skillsets needed. Identified BPM questions raised in the university course are mirroring the practitioners' maturity in the local practice and will help to guide the analysis and development of a practical theory based on one domain (local practices in government).

3.1.1   The Work Practice

The empirical study will be based on ten course participants working in two different municipalities in Sweden (Karlstad and Skellefteå municipality). The participants have different roles and more or less experience in process orientation and process modelling since BPM maturity varies in their organisations. The participants should explain, relate and apply theory to their practical work situation in four written assignments. Interventions with the course participants (local practices) are conducted in email conversations, in eight supervised sessions, feedback on the assignments and four workshops for discussing findings and experiences. As practitioners will apply theory and use the PoP model in their organisations, supervised sessions and feedback may lead to changes in the local practice as well as data collection for the researcher when identifying and discussing business problems at hand. The workshops are recorded to be able to transcribe the conversations. A template to guide the participants in data collection will support the analysis of results in different context and patterns (how things (may) work according to Goldkuhl, 2010) from each practitioner with respect to role in organisation (local practice) and initiated BPM skills. Practical theorising is a pattern coding (axial coding in Grounded Theory by e.g. Strauss & Corbin 1998) including e.g. pre-conditions, enablers, obstacles, strategies, tactics, actions, states, transitions and consequences (Goldkuhl, 2010). To explain practice in terms of BPM maturity, data collection methods are planed to generate documentation in the research process such as supervision diaries, mail conversation, written assignments, business process models and recorded workshops as a basis for transcriptions. Within the work practice participating organisations are part of developing academic theory into practical concepts in terms of the PoP model. In addition, the PoP model may influence actions in the local practice when using it and fed back by lessons learned in assignments and workshops. The ALTAR approach described by Shah et al (2007) recommend a similar research design but study organisational learning in different levels (strategic, tactical and operational learning).

In addition to the learning outcomes in assignments (#1 - #4) the sources in the data collection are presented in the research design, see Table 1. A match to the steps in the process staircase (maturity levels) as well as a match to categories in the cognitive domain (remembering, understanding,

applying, analysis, evaluating and creating) is useful to develop the course design and to identify lack of ability and need for training in organisations.

Maturity levels	Assignments	Supervised sessions	Email conversations	Workshops
Mapping processes	#1 Purpose/ value of process orientation #1 Characteristics of a business process #1 The link between business and IT in business process modelling #1-3 Ability to use a mapping tool and produce a business process diagram #3 Ability to use the PoP model when producing a business process diagram	"- How can I use the swim-lane notation?"	"- What kind of modelling tool can I use?"	Experiences and process diagram in the assign-ment #1 are discussed and lessons learned.
Establishing processes	#2 Roles in an organisation #3 Ability to use the PoP model when producing a business process diagram	"- People does not now why they have mapped all these processes"	- What kind of names can we use to our core business processes?	Experiences and process diagram in the assign-ment #2 are discussed and lessons learned.
Evaluating and improving processes	#2 Different perspectives in process modelling #3 Measures in processes #3 Ability to use the PoP model when producing a business process diagram	"What kinds of KPI's are appropriate?"		Experiences and process diagram in the assign-ment #3 are discussed and lessons learned.
Monitoring processes	#4 BPM maturity in organisations #4 Effects (+ & -) that a process oriented business development might generate	- How is a process oriented organisation successfully managed?		Experiences and process diagram in the assign-ment #4 are discussed and lessons learned.

Table 2.   Data collection in the university course

By questions raised in practice, research can be guided, planned and systematically conducted. When analysing information collected from practice maturity levels can be defined in detail and act as a BPM methodology in terms of guidelines on what to achieve (e.g. Rohloff, 2009) and what to do (actions) related to the required skillset and ability to perform BPM initiatives. Findings can define basics in levels of process orientation related to ideas on training programmes and teaching techniques to support all six cognitive domains (remembering, understanding, applying, analysis, evaluating and creating) in order to achieve purposes and intended value. Learning ability according to course content, structure and assignments can be evaluated and designed to match the findings in the work practice. Moreover, by sharing the overall course results (meaning of theory and practice) with all course participants in workshops (knowledge and experience exchange) and as further developed content in the PoP model, baseline and quality in the next course instance is improved as well as the relevance for practitioners.

4 Discussion and Conclusion

The purpose of this paper was to elaborate practice research in terms of using a practical inquiry strategy in the design of a university course and in what way the university course could act as a work practice and how practical relevance can be ensured in general knowledge contribution in BPM maturity. This paper gives one example and discusses how we could conduct inquiries in work practices. The university course will build on lessons learned by Recker and Rosemann (2009) meaning to prioritise the existence of process-oriented thinking rather than the mastery of process modelling techniques and tools. zur Muehlen's (2008) shows the importance of thinking about BPM maturity in terms of 'skills'. The university course will be the work practice when it comes to the ability to learn the basics in process orientation and process modelling, as well as a channel (empirical data collection) to explore the meaning of BPM maturity in local practices. The course design enables the identification of practitioners' 'questions', i.e. needed knowledge in BPM to be analysed compared to findings in Neubauer (2009) and Tregear (2010). To be able to aid in solving practitioners' questions, you have to be able to identify them. In supervised sessions, email conversations and workshops we will have the opportunity to collaborate ant to obtain an in-depth understanding of practical meaning of BPM maturity. Further more, a comprehensive set of criteria by which research might be conceived, designed, conducted, presented, and evaluated can be seen as using the PoP model. Concepts, Directive, Guideline and Templates can be used as a tool to collect data but also a tool to present our results.

When applications from practitioners' everyday work are used as case studies in the course assignments, there is an opportunity to identify BPM actions and business issues (problematic situations) in the participating organisations. Thereby, it will be possible to collect empirical data to be used in the research, as well as to collect, answers and provide discussions that will give useful perspectives, concepts and methods contributing to changes (interventions) in the local practice. Moreover, it will be possible to conduct practical inquiries to develop a general knowledge of practical relevance and usefulness among course participants. The practitioners are interested in the same practical scope, i.e. BPM initiatives with process mapping as the first step. In the course a generic process methodology (the PoP model) serves as a knowledge transfer from ten local practices and is improved upon the course participants as a joint result of the knowledge development and a general practice contribution. Research results, based on the practice research design, will be helpful in increasing the quality of the university course according to training in process orientation basics such as values, process modelling skills and use of methodologies and tools. A normative knowledge will be a guidance on what kind of skill set is appropriate to achieve in the academic coursework, as well as how to do this in a structured way. Moreover, the empirical data will further develop the generic PoP model to be suitable for different organisations and business contexts. Practitioners will improve their BPM skills with a sound theory grounding as well as by practical lessons learned from applying theory in their own local practice and other participating organisations.

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