



Editorial Notes: Communication and Coordination of Business Processes

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1 Background

It is traditional for editors to introduce papers in special issues of scholarly journals, but we have also decided to take this opportunity to introduce what we feel is a new area of investigation- *Communication and Coordination of Business Processes (CCBP)*- and to argue for its utility in information systems, software engineering and management. We also take this opportunity to provide the background to the *International Workshop on Communication and Coordination of Business Processes (CCBP)* from which a number of these contributions have been sourced. The CCBP Workshop was run under the umbrella of, and directly after, the *10th Language Action Perspective (LAP) Conference*, and so before we can talk about the workshop, and therefore the special issue, we need to talk about the main conference.

LAP10 was held at Kiruna, Sweden between June 21st and 22nd 2005. There was an interesting story circulating amongst the delegates about why Kiruna had been chosen for this anniversary event. An agreement had been made some years before between Göran Goldkuhl and Jan Dietz, two principles of the LAP community, that if there was to be a tenth LAP conference then it should of course be held in Lapland. Kiruna is the main town in the Swedish Lapland and it was therefore a natural choice. It is an exotic place being the gateway to last European wilderness. The first Language-Action Perspective (LAP) workshop had been held in Oisterwijk in the Netherlands 1996. Since then, LAP meetings were held annually for researchers interested in communication modelling and especially the application of Austin and Searle's Speech Act Theory and Habermas' communicative action to information systems. However, the 10th LAP conference also represented the last in the sequence, at least for the time being. The LAP community had decided at Kiruna to formulate a new conference theme, still based on the communicative action perspective- the Pragmatic Web. The justification of the move from LAP to the Pragmatic Web was that the latter would have a sharper and more specific application focus, but a broader theoretical one than the former.

Similar to the newly proposed Pragmatic Web initiative, CCBP has a specific application domain- in this case business processes- but the Call for Papers encouraged a broad range of communication perspectives to tackle it. In the following sections we describe the disciplinary significance of the 'process orientation', some discussion about what it means to communicatively characterise 'business processes', a description of the areas of interest that comprised the Call for Papers for the workshop and special issue, and some brief introductory remarks about each of the contributions in this special issue.

2 Disciplinary Significance of the Process Orientation

Within Management, the fields of Process Management (PM) and Business Process Management (BPM) have been developed to account for process orientation applied directly to organisational studies (Hammer 1996; Harrison and Pratt 1993). Its influence and significance cannot be overstated, for example the ISO9000 quality standard mandates a process orientation. Modern process management emphasises the continuous process improvement or evolution advocated by modern Business Process Management as distinct from the aggressive radical transformation to process change advocated by the largely discredited Business Process Reengineering (BPR). Much of the development in Process Management, Business Process Management and Business Process Reengineering have been developed and shared between various informatic domains. And so it came to pass, that a handful of inspiring papers were presented as part of the *International Workshop on Communication and Coordination of Business Processes* on a chilly, but nonetheless relentless, northern latitude summer day. The job of CCBP was to bring a range of communication-based techniques to bear on process orientation.

While many definitions of business processes have been proposed (see Clarke 2005a, p.95 for a sample), they often share a number of similar features. For example, business processes are generally characterised as having (1) a sequence of repeatable activities, linked procedures, or logically related tasks that (2) often cut across functional boundaries to (3) fulfil or serve the needs of internal or external customers by (4) collectively realising a business objective, goal or policy. Processes are defined using standard information theory that produces definitions of processes that are:

- *discrete, crisp entities* embodying a specific task, objective or purpose,
- *static and steady state* in that the purpose is fixed (that is static) for the duration of its life, and does not change in its purposes (ie. steady state)
- *compositional* in that larger processes with more complex purposes can be built out of simpler business processes

The interests of the editors in developing the CCBP workshop and this special issue is based on their shared belief that communicative approaches offer a profoundly new perspective on business processes, one that is ultimately more subtle, nuanced and powerful than information based approaches.

3 Definitions of 'Process': Communicative Characterisation

Communication based approaches offer the possibility of understanding how interactants actually conduct business processes, and how these processes can be connected to both the immediate as well as the broader organisational situations in which they occur. The ability to view business processes from a communicative perspective lies in the fact that any recurring goal oriented activities or work practices directed at fulfilling or serving the needs of customers or stakeholders, leaves its imprint on any associated communication. This imprint is evident in the way that the associated stakeholders- or more formally interactants- adopt various roles, position other interactants, select from the range of functions that they can use once assuming a particular role, and choreograph their moves and exchanges with other interactants when 'communicating while working'.

There are many scholars who ask about the relevance of communication-based approaches. For them, the centrality of communication in our disciplines and their practices is not evident. A common question is 'What happens when we are talking about written language rather than spoken language, for example forms, reports, and procedure manuals?' The details of the answer to this question depend on the theoretical approaches applied to addressing it, but in general any useful theory of communication provides methods to account for the different language resources associated with spoken and written language.

Another valid concern is 'How can you use these approaches in situations where no communication is evident?' This kind of methodological problem frequently arises in highly routine business processes and services, for example a library loan where no language is used by the borrower to signal a request, and none is provided by the librarian to signal the fulfilment or completion of the transaction. In fact the staging of these highly routine work practices is itself a feature developed in and characterised by communication. Interactants would explicitly utilise these stages and communicate about them and complete the work using them in situations where the borrower was unfamiliar with the process, for example. However, the conventional nature of this work practice would enable interactants familiar with it to realise these stages non-verbally. In other words non-verbal realisation does not by itself create an impediment to the application of communication theories to the study of business processes! One example of this is presented by Goldkuhl (2003): an analysis of routine purchase process (the buying of a daily newspaper) where no words are uttered. The analysis of this 'silent' business process was based on an explicit communication perspective and it rendered valuable characterisations of the interactants' non-verbal behaviour.

A related methodological question is 'How can you study situations in which there is no obvious two way human communication occurring at all- for example user interaction or human-to-computer communication?' The fact is that while the lexical and grammatical resources that typify human communication are not especially evident in these cases, other kinds of communication resources assume greater importance. For example, the conventional staging that we previously described in the library borrowing workpractice is a dominant organising resource in menu structures and interfaces. So too are other language resources, for example various logico-semantic relations including expansion prototypically realised by 'and', 'then', and 'so' in language (Martin 1992, 170-171). These language resources are often rendered

graphically on the user interface and are organised spatially and temporally, but they none-the-less are first acquired, represented, and ultimately becomes part of our subjectivity by means of language.

Furthermore, and perhaps paradoxically, computer-to-computer communication can be described in terms of, or has been modelled directly on, aspects of human communication. Simple turn-taking of human conversation can be used to describe the client-server models that dominate the Web and many Communications Technologies. In all likelihood, it was this very communication resource that was drawn upon by the engineers when they were developing these ingenious technical solutions. As communication researchers we know that humans are often engaged in more complex exchange structures than simple turn taking. Imagine what technical solutions might be invented by engineers who understood these more sophisticated models of exchange structure (see Berry 1981)? Similarly the communication associated with complex automated systems, like those found in naval applications for example (see Anstee 2005), has been found to be modelled in many cases on the human-to-human communication that these systems supplanted. Communication is a resource for complex social behaviour and also serves as a resource when developing technologies to support or automate it.

Not only are routine business processes understood from communication terms, so is the communication that takes in contexts other than 'communication while working'. Meetings, Presentations, Reviews, Walkthroughs and other social occasions in which 'communication about work' can be found, are also subject to communicative analysis, and cover occasions in which facilitation, management and systems development activities and processes (see Clarke 2005b) can be understood in detail. These are newer areas of investigation for the CCBP community, but they are ones that our theories and methods equip us to investigate.

4 Areas of Interest - Call for Papers

As a consequence of the issues raised above, four major themes of interest were described in the Call for Papers for both the Workshop and this Special Issue:

Communicative Processes

- What counts as relevant theories of communication in organisation contexts
- Methods for communication: developer-developer; client-developer; client-client
- Communicative approaches to negotiation, decision-making, rhetorical structure, and/or communication patterns in work

Communication Issues

- Ambiguity, Miscommunication, and Polysemy
- Shared/Partial understanding, perspectives, viewpoints
- Positionality, Agency and Subjectivity
- Audiences, Ideologies, Voices and Discourses

Learning, Representation and Knowledge

- Communicability of Methods

- Representational Practices, Power, Ethics
- Methods, Learning and Knowledge Management
- Representing user Domain Knowledge
- Ontologies and Organisational Communities

Testing, Evaluation, Modelling and Metamodelling

- Metrics and Measurement for Communication
- Static and Dynamic Method Testing, Evaluation, Mapping and Deployment
- Method Modelling/Metamodelling of Methods in isolation and in Combination

It seemed reasonable to focus on business processes from a communicative perspective, to describe communication issues associated with recognition and analysis of processes, to reflect on learning representation and knowledge concerning process orientation, and then to think about processes from the professional perspective as testing, evaluation, modelling and metamodelling. In hindsight perhaps our Call for Papers was conservative compared to its object of knowledge, but it seemed to be the best compromise for the types of research work in circulation at the time. We could just as reasonably approached the substantive area of business processes from a multi-level approach (see Clarke 2005a) starting by considering discrete processes to account for individual workpractices and composite processes to account for entire systems in organisations, then to describe the communication-about-work level associated with management activities, systems development and so on- what Anderson and Madsen (1988) almost two decades ago designated as ‘design and professional-oriented languages’- and finally to consider the process-orientation that is at the very foundations of our disciplines themselves, representing a discursive turn in how our objects of knowledge are constituted. In any case we believe that CCBP has been an interesting experiment in the development of what Goldkuhl (2006) refers to as intellectual capital in collaborative research- particularly in terms of the description and development of theories, models and methods (knowledge capital), and also in terms of it having helped establish an emerging and engaged research community (social capital).

5 Contributions in this Special Issue

The process used to review the submissions for the CCBP Workshop was identical to the one developed and used in the ALOIS series of conferences. The process consisted of three blind reviews by appointed experts in the specific area, and this accounted for the high quality of the final Workshop papers. But in the Call for Papers for this Special Issue, the conference papers and any others that were submitted in response to it were subject to triple blind reviewing as well. This meant that in some cases papers were reviewed six times. The review process was managed by SYSIACs Associate Editors Mikael Lind and Pär Ågerfalk. The Guest Editors Göran Goldkuhl and Rodney Clarke split the papers and provided the final adjudication between recommendations by reviewers. In one case both guest editors contributed to the final determination of acceptance or rejection.

The final sequencing of papers in this Special Issue moves from the detailed analysis of discrete work practices, through to papers that look at related sets of workpractices, and then from 'linguistic' to more 'discursive' communication theories and methods:

1. Goldkuhl
2. Eriksson and Lind
3. Rittgen
4. Weigand and de Moor
5. Taxén
6. Lorentzen Hepsø and Hepsø

Goldkuhl's paper addresses one of the corner-stone in some influential LAP approaches: the communication loop modelling of business processes. This kind of modelling directs focus on two fundamental roles in business processes- customer and performer. The paper introduces the notion of multi-responsive action and as result of this new concept more multi-faceted role definitions emerge. Multi-responsive action means that an action, within a business process, can be a response to several other prior actions, not only to one. This paper is mainly a conceptual analysis but it uses a LAP standard reference case, "the pizza shop", for illustration.

The paper by Eriksson and Lind addresses the issue of commitment management in business processes. How do companies make and fulfil commitments to customers? This is a pending issue in business process management, especially when there are parallel business transactions that compete for the same delivery capacity. The authors base their work on some empirical cases where problems with commitment management have been identified. There were deficiencies in the supportive infra structure which includes IT systems. The authors develop a conceptual framework for commitment management that is used to explain different types of deficiencies.

Rittgen's paper examines how trading partner agreements (TPA) regulate organisational cooperation and develops a language action model of the interactions between organization bound by such agreements using an approach based on the Language-Action Perspective on organisations. The interaction model utilised within the DEMO methodology is applied to modelling the static and dynamic aspects of TPA, and is also used as the basis of the Transaction Model supporting the dynamic parts of the contract by means of describing the detailed Speech Acts that constitute each transaction. This approach is exemplified using a study of a Logistics Provider and a retail chain.

The paper by Weigand and de Moor addresses two types of modelling approaches to business process modelling: event models vs communication models. These two types of models represent different ways to conceive business processes; event modelling as based on triggers and causality and communication modelling as based on negotiation and agreements. The authors take a step towards reconciling these two diverse approaches. They argue for a blended approach and they introduces a business process analysis method that combines event chain modelling with a communication-oriented approach without blurring important distinctions between the two levels. Conceptual as well as modelling issues are analysed by the authors.

Taxén introduces an integrative, socio-technical approach to informing co-ordination called Activity Domain Theory utilising the concept of praxis and informed by Russian Activity Theory. By employing this combination of theories he is able to provide a consistent approach to communal meaning as being negotiated within activity domains and along dimensions called activity modalities. He demonstrates how this approach is grounded empirically, theoretically and internally and then describes how it can be applied to understanding coordination, business processes and communication with a view to applying the approach to complex development tasks such as providing products, services and systems to customers and clients.

The paper by Lorentzen Hepsø and Hepsø studies and compares two business process development initiatives in the same organisation (the oil and gas company Statoil). Their focus was on relations between different stakeholders in development projects as processes of inclusion and differentiation between different groups (conceptions of ‘us-and-them’). The authors studied how communication and coordination (via different enrolment strategies and role playing) in business process projects lead to different results because of different conceptions of ‘us-and-them’. Reification, translation and legitimation are three aspects of communication and coordination processes that are addressed in the cases in order to understand how conceptions of us and them develop between users and developers in business process development.

References

- Anderson, P. B. and K. H. Madsen (1988) “Design and professional languages” in Andersen, P. B. and T. Bratteteig eds/ (1988) *Computers and language at Work: The relevance of language and language use in development and use of computer systems*, Institute of Informatics Research, University of Oslo, Norway, Report No. 126
- Anstee, R. (2005) “Integration via Specification of Complex Systems using an Interface-centric Semiotic Paradigm”, *Unpublished PhD Dissertation, Staffordshire University, United Kingdom*
- Berry, M. (1981) “Systemic Linguistics and Discourse Analysis: a multi-layered approach to exchange structure” in Coulthard, M. C. and M. Montgomery eds/ (1981) *Studies in Discourse Analysis* London: Routledge and Kegan Paul
- Clarke, R. J. (2005) “Communication and Coordination- Fundamental Issues in Business Processes?” Invited Paper in Goldkuhl, G.; Clarke, R. J. and K. Axelsson eds/ (2005) *Communication and Coordination in Business Processes: An International Workshop (CCBP)*, Kiruna Sweden 22nd June 2005, pp. 93-101
- Clarke, R. J. (2006) “The Work that Analysts Do: A Systemic Functional Approach to Elicitation” in Nilsson, A. G.; Gustas, R.; Wojtkowski, W.; Wojtkowski, W. G.; Wrycza, S. and J. Zupančič (2006) *Advances in Information Systems Development: Proceedings of the 14th International Conference on Information Systems- Development Bridging the Gap between Academia and Industry* Volume 1 NY: Springer Science + Business Media ISBN-10: 0-387-30834-2, pp. 325-336
- Goldkuhl, G. (2003) “Conversational analysis as a theoretical foundation for language action approaches?”, in *Proc of 8th Intl Working Conference on the Language Action Perspective (LAP2003)*, Tilburg
- Goldkuhl, G. (2006) “Collaborative Researching- From ISAC to VITS through Humor” in Bubenko Jr, J.; Jansson, C. G.; Kollerbauer, A.; Ohlin, T. and L. Yngström eds/ (2006) *ICT for people: 40 years of Academic Development in Stockholm* Department of Computer and Sys-

tems Sciences (DSV) at Stockholm University and Royal Institute of Technology, ISBN 13: 978-91-631-9588-4, pp. 89-98

Hammer, M. (1996) *Beyond Reengineering: How the Processed-Centered Organization is Changing Our Work and Our Lives* HarperCollins

Harrison, D. B. and M. D. Pratt (1993) "A Methodology for Reengineering Businesses", *Planning Review (PLR)* 21 (2) Mar/Apr pp.6-11

Martin, J. R. (1992) *English Text: System and Structure* Amsterdam: John Benjamins

Winograd, T. and F. Flores (1986) *Understanding Computers and Cognition: A New Foundation for Design* Addison-Wesley Publishing Company, Inc.