IS THERE A ROLE FOR PHILOSOPHY IN GROUP WORK SUPPORT?

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Abstract: There appears to be evidence that much potential IT support for group work is yet to be widely adopted or to achieve significant benefits. It has been suggested that, in order to achieve better results when applying IT to group work, designers should take more notice of modern philosophies that avoid the so-called "Cartesian Dualism" of mind separated from matter. It is clear that group work support is more than a matter of automating formal procedures. This paper reviews the question from the author's lifetime of experience as a consultant, academic and group worker; proposes some models to address some of the missing perspectives in current approaches; and suggests how future efforts could be re-orientated to achieve better outcomes.

1 INTRODUCTION

Recent years have witnessed much soul-searching in the field of Information Systems (IS). This was highlighted in (Hirschheim and Klein, 2003), which talked about a crisis in IS. Although the obvious symptoms have been the bursting of the dot.com bubble and a major decline in student enrolments, the authors saw the more serious issue as the failure of IT and the internet to introduce a "rational-critical discourse". In other words, IT support has concentrated on the mechanistic facilitation of business and government activity, and not on improving human communication and participation.

In attempts to counter this shortcoming, philosophy has sometimes been invoked as an influence in a number of IS innovations. For example, Organisational Semiotics (Stamper, 1973) can be traced back to the "pragmatism" of Peirce, see e.g. (Wiener, 1958); and Language Action Perspective (LAP) (Medina-Mora et al, 1992) to "Speech Acts" (Searle, 1964) – and, according to (Nobre 2007a, 2007b) to Heidegger's "Being and Time" (Heidegger, 1926).

Philosophy is also the theme of (Mingers and Willcocks, 2004), which contains a collection of authors' views on the relevance of philosophy to IS. However philosophy rarely makes for easy reading by IS and IT practitioners, especially in the case of Heidegger.

(Medina-Mora et al, 1992) stated that "We encounter the deep questions of design when we recognise that in designing tools we are designing ways of being. By confronting these questions directly, we can develop a new background for understanding computer technology – one that can lead to important advances in the design and use of computer systems."

In the case of using IT to support group work, (Nobre, 2007a) suggested that most of our current efforts are too biased towards "structuralist and cognitivist interpretations of group behaviour". Instead, we need to "study collaboration and coordination in innovative ways that explore the social embeddeness and embodiness of human meaning and knowledge creation".

Many useful insights have also been offered by other authors, for example (Checkland and Scholes, 1999; Kent, 1978; Mumford, 1995; Ciborra, 2002) and the proponents of Activity Theory, e.g. (Engeström et al, 1999; Constantine, 2007). These publications do not require us to hack our way through the jungle of Heidegger's terminology.

However as (Lyytinen, 2004) points out, LAP has not managed to become part of the IT mainstream, and the same can be said for many other innovations of IS and IT researchers. There is therefore an unsolved question of how we, as academics, analyst/designers and software developers, can actually help to realize the potential improvements of these innovations.

The present author is basing this paper not only on the literature, but also on his experience in 45 years of work in Information and Management Science (Tagg, 2008). The paper continues by first analysing some of the things that are often said to be wrong with current practice in group work. It then considers the potential value of some philosophical (or quasi-philosophical) ideas. Two examples of additional conceptual models are then proposed, which try to address some otherwise missing perspectives that a philosophical approach may uncover. These are followed by a short conclusion, which includes some suggestions for future changes in approach.

2 THE CURRENT ILLS OF WORKING IN GROUPS

Many articles, especially in the popular press, suggest that even with all technologies we have, projects involving collaboration between humans have low success rates, implementation delays or serious teething troubles. Whistle blowers are not encouraged, and a credibility gap arises between the messages one is told and what one observes or finds out. Taking a philosophical approach, we should try to address the reasons, and not pretend that group work follows some ideal pattern.

2.1 Overload

In 45 years in the workplace, this author has noticed a relentlessly creeping number of hours one is expected to work per week, and a greater proportion of working time being spent on non-core work. Examples are regulatory compliance, data collection and measurement, quality assurance, switching from one job to another, attending to ever-expanding volumes of email - and last but not least, "backside covering" – trying to cover oneself against blame for when things go wrong.

Overload is discussed in the literature, e.g. (Whittaker and Sidner, 1996). (Kirsh, 2000) also discusses the cognition problems of frequently switching focus. Fragmentation – the problem of not getting a clear run to get things done without interruption - has also been recognized by e.g. (Czerwinski, 2006; Tungare et al, 2006).

For many information workers, a relentless worsening of overload has outpaced any gains from using IT. A Canadian study (Wilson et al, 2000) reports that some workers are experiencing depression, alienation and detachment at work. This

in turn leads to failure or poor quality in what the group is trying to achieve.

2.2 Too Much Methodology

(Ciborra, 2002) strongly argues that the worlds of management and IT have become preoccupied with methodologies, theories, models and procedures - and, as a consequence, measurement. He claims that in many cases, there has been little or no measurable gain from all this effort.

(Kent, 1978) takes a similar view, and warns against the tendency to try to force reality to fit our models. Part of the problem arises because, for those of us who are academics, our promotion prospects depend on getting papers published; the chances of getting a paper accepted by referees – if it has a simple formal model in a single coherent area - seem higher than for a paper proposing a more interdisciplinary idea. Likewise, consultants often need to have a technical or management bandwagon which one can jump on in order to get business.

Especially with the more creative types of group work, an emphasis on procedures seems counter-productive. Instead the emphasis ought to be on selecting from available tools and resolving issues by discourse. However too many tools can bring problems just like too many methodologies. There is a limit to what we can add to the users' toolboxes, especially if they give contradictory results. The rate at which users can absorb new tools and methodologies is also limited.

2.3 Too Much Measurement

It has been observed for many years that each time a bad outcome happens, management culture tends to demand a new control system to ensure it doesn't happen again, with the consequent increase in the data that has to be collected. As a result, humans in groups pay more attention to ensuring acceptable values of these measures - rather than achieving the primary business function of the group.

An interesting statistic in Australia is that the administrators, as a percentage of all university staff have increased from 40% to 60% in 8 years (and even this does not recognise the mass of administrative and reporting work that has been thrown onto academics). When challenged, the Education minister commented that if we want best value for the education dollar, then we need this level of control. But absolute student achievement standards are not measured.

In fact we are seeing a philosophy develop that says that what we can't or don't measure isn't important. Our promotion prospects seem tied only to achieving figures.

2.4 Legacy Management Culture

Some problems of group work derive from the darker side of common management "culture".

- "Seat of the Pants" style, reacting to crises. Management often takes the line "don't give me all that stuff – my intuition works best". This may be valid - but only up to a point.
- Divine Right of Managers – "management should have the right to manage" – in other words, "I want to run this group like an army – do what I say without question".
- Deterministic management, i.e. the delusion that we only have to set a plan, or put a procedure in place, and it will just happen. Risk management is sometimes considered, but often leaves out many of the ways in which things can go wrong.
- Micro management and over-control – the idea that we can get more deterministic results if we impose tighter control.
- Throwing burdens on front line workers – the idea that the job of applying control can, without penalty in lost time and work fragmentation, simply be thrown onto the front line workers.
- Organisational Learning (or lack of it) – the idea that if we ourselves didn't invent an idea, it can't possibly be applied to our situation.
- Pressure on the human – if things aren't happening as we want, just applying more person-to-person pressure will solve it.

2.5 Human Frailty

There is a group of ills that relate to the tendencies towards expediency and bravado that exist in most of us.

- We are driven by headlines – maybe because of time pressures, we only read or hear the headlines, and don't look into the "why" or read between the lines.
- Spin – a profession seems to have grown up in always finding words to make black sound white. However spin eventually leads to credibility gaps, and is hence unsustainable – people eventually realizing that things aren't like what they were told.
- Believing one's own Bullshit – not seeing that much of what we say is probably nonsense, but wanting to maintain our prestige or pride.

- The Backs to the Wall syndrome – when things are going badly, there is a higher motivation to improve, but also to cheat.
- The Golden Age syndrome – when one holds a commanding competitive position, e.g. in military, manufacture, raw materials, fuel, or entertainment terms, there is more temptation to rest on one's laurels and pretend it's all due to our superior culture (e.g. Rome, British Empire?).
- Litigiousness – resorting to lawyers and hence spending big sums so as to be seen to be "fighting all the way". This not a level playing field – the big groups can always get away with spending more on lawsuits than the small groups.
- Jargon and general language misuse - we are tempted to hide behind specialist jargon, which often seems geared to limiting the contribution of fellow group members who don't have that speciality. The result is often uncertainty and mistrust.

2.6 The Failure of IT so Far

Within the research group of which this author is a member, (Shumarova and Swatman, 2007) found in the literature little evidence of practical evaluation of many CSCW (Computer Supported Cooperative Work) initiatives, except on use of the main commercial groupware tools, such as Lotus Notes or Microsoft Outlook, or simple communication aids.

There have been a number of suggested improvements to groupware, e.g. (Bellotti et al, 2004; Muller et al, 2004), but these prototypes have only been evaluated done using temporary "interns" and then seemingly abandoned. At the time of writing, there have been few signs of these ideas becoming part of mainstream commercial tools.

More fundamentally, (Hirschheim and Klein, 2003) think the whole field of Information Systems is in crisis. Their argument is that the internet has failed to introduce an improvement in "rational-critical discourse". Instead, it has become simply a tool for supporting commercial buying and selling; a medium for publication by government, industry and pressure groups, or a data communications medium to support formal processes. Applications have been restricted to short-term efficiency.

3 THE RELEVANCE OF IMPLIED OR EXPLICIT PHILOSOPHIES

3.1 The Implied Philosophies of Current Business Practice

Even the natural language we use to converse with other humans assumes a culture and a default philosophy, derived from a melange of inherited religion and scientific rationalism. It is possibly at this level, rather than in formal systems, where Heidegger or others can maybe take us.

Using small groups has often been advocated as a good approach to collaborative activity. They maintain motivation better and can resist imposed vested interests. However they do not address competitive power or economies of scale; and, if priorities change, a group may be reluctant to disband itself.

Current business practice favours large hierarchies, e.g. armed forces and multinationals. Success depends on a clear command structure, implying subordination of the individual to the big group's aim. This may be assisted by a prescribed religion, a mission statement or company slogans. Management in such groups has become a key concept, e.g. (Drucker, 1954) - although this is often perverted by human egos and hidden agendas. Strict hierarchies have had a generally successful run over the course of history, but today they may fail because people today no longer accept things just because someone tells them - they can find a different view in a Blog or Wiki.

3.2 The Implied Philosophy of Science and Technology

The contrasting philosophy of science and technology, sometimes derided as Cartesian Dualism, has had a major influence on the evolution of modern life and society. It can be seen as a reaction to the monopolizing of all knowledge and interpretation by religious and monarchic hierarchies. The essence is that reality is only that which we can observe or prove logically. Scientific methods have been applied to Management and IS in the form of such initiatives as Procedure Manuals, O&M, OR, Computer Systems (including programming, systems analysis and databases), Business and Information Strategy Planning, BPR and Workflow.

However as everyone knows, failures are frequent and human commitment is often half hearted. This may be because the underlying theories and models depend on gross simplifications of reality, and often attempt to force reality to fit the process logic. This is particularly true of methods for designing systems that can be implemented on computers. UML, for example, may be a good fit for object oriented technology, but it misses many perspectives that should be considered to ensure success of the total system.

3.3 The Implied Philosophy of the Semantic Web and Related Ontology

This includes such concepts as Knowledge Management, Organisational Learning and Artificial Intelligence. Any ontology has to be based on some or other approach to structuring the real world. However much of the technology is still dependent on inexact natural language, and is complex to build, maintain and understand.

In spite of this, ontologies are one of this author's topics of recent interest, and it is critical to a current project to develop usable software support to categorise the mass of data that assails us, and to enable us to cope with our overload.

Table 1 shows a model I have been working on recently, which gives priority to the many relationships that do not often get considered in most IT-based models.

Table 1: Relationship Types in this author's proposed Ontology Structure.

Major Group	Minor Group examples
Classification "is-a" type	Specialisation, Generalisation, Instantiation, Membership
Composition "part-of" type	Inclusion, Containment, Bounding, Ingredient
Apposition "is-with" type	Connection, Interfacing, Fitting, Holding, Owning, Proximity, Familiarity
Comparison "is-like" type	Similarity, Differentiation, Identification, Relative space/time position
Processing	Sequence, Dependency, Simultaneity, Derivation, Condition, Repetition
Transformation	Production, Manufacturing, Consumption, Metamorphosis, Movement
Interaction	Communication, Transaction, Agreement, Contention, Reaction, Competition, Cooperation, Trust
Planning	Desire, Intention, Responsibility, Limitation, Requirement, Design, Commitment, Dreaming, Fearing
Representation	Naming, Representing, Observation, Recording, Imagining, Signification
Measurement	Measurement, Estimation, Prediction
Reasoning	Interpretation, Summarisation, Justification, Causation, Solution, Understanding, Hypothesis
Utilisation "is-useful-for" type	Purpose, Potential

This relationship-oriented ontology is subject to five basic rules:

1 a relationship is a "thing", just as an entity is
2 a relationship can participate as a slot in another relationship
3 a relationship can have attributes
4 a relationship can have many "slots"
5 any classification of relationships is fairly arbitrary, and each type has aspects of one or more parent types

Potential relationship slots include two or more things that are being primarily related, agent or actor, theoretical basis or assumption, date-time-place (possibly "from" and "to" and "reported"), and the source of the alleged relationship ("says who?').

In my ontology I separate the "lexical" text strings (or other signs) - that enable context to be recognised - from the ontology classes and instances themselves. I have also attempted to take notice of Mereology – the study of the many variations in "part-of" relationships, e.g. (Lewis, 1990).

However if any these models become too prescriptive, they too may still fail, as they become too diffuse and complex for any automation, and at same time too mechanistic to recognise all experience and motivation.

3.4 The Philosophies behind Organisational Semiotics, Language Action Perspective and Activity Theory

Among conscious attempts to introduce philosophy into IT, Organisational Semiotics (Stamper, 1973) proposed a "ladder" with 6 steps - with Pragmatics and Social World added as extra steps above the normal ontological ones of Empirics, Syntactics and Semantics. He also proposed a notation "Semantic Normal Form" and a methodology "MEASUR". More recently, (Cordeiro and Filipe, 2004b) proposed a Semiotic Pentagram Framework.

Language Action Perspective (LAP) claims a philosophy derivation from the earlier Speech Act theory. It is already available in group support in the form of the Action Workflow tool (Medina-Mora et al, 1992). Methodologies based on LAP include DEMO Business Process Modelling (Dietz, 1999) and BAT (for Inter-organisational coordination) (Goldkuhl, 2006).

Activity Theory was originally proposed by Russians (e.g. Leont'ev, 1977) and since championed by (Nardi, 1996) and (Engeström et al, 1999). This has less of a strictly philosophical basis but consciously models more perspectives than most IT

methodologies. The work of the FRISCO group (Hesse, 1999) and the Theory of Organised Activity (Holt, 1997) should also be mentioned here.

All these theories seem totally creditable as contributions to improving IS development, and their best features can possibly, as suggested by (Cordeiro and Filipe, 2004a) be combined. But the question is, why have they not become part of the mainstream? According to (Lyytinen, 2004), the reason for the failure of LAP is a mixture of not having been enshrined in a widely used commercial package, a failure in the diffusion of information and the inability of the existing knowledge networks to cope. As an ex-consultant, I ask myself "could I go out to clients with these theories and expect to get enthusiastic involvement from client personnel?"

3.5 Heidegger and "Grand Name" Philosophies

Even as a non-philosopher, I can see many advantages in considering philosophies such as utilitarianism and pragmatism in relation to supporting group work.
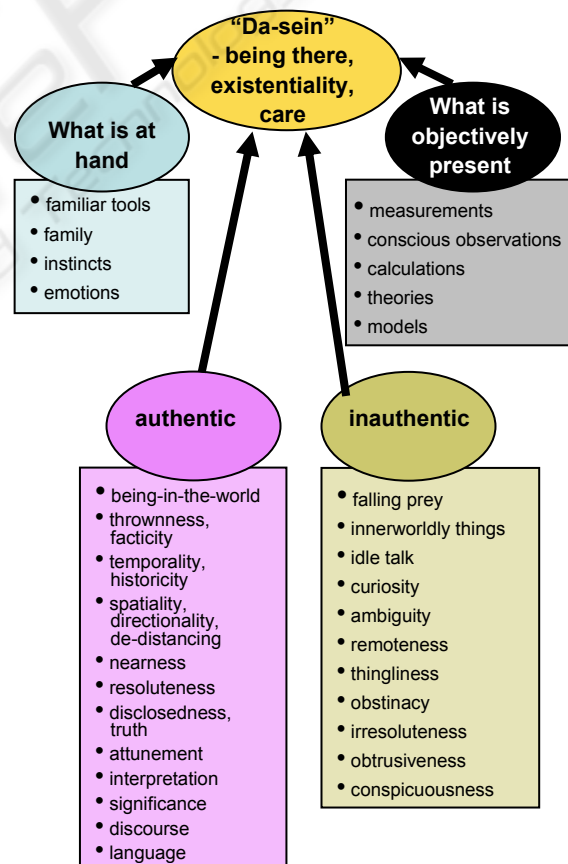

Figure 1: An Attempt to Diagram some of the Main Concerns in Heidegger's Ontology.

But, as presented in the literature, they do not appear to me to answer the challenge I have just stated. I am also unsure how well they address the inevitable need for "trade-offs" between a multitude of different utility measures.

As an illustration, I have attempted in Figure 1 below to show diagrammatically the essence of some of what is said in Being and Time (Heidegger, 1926), as interpreted via (Scott, 2007) and (Heath, 2003). However I would claim that any attempt to bring Heidegger directly into most of what we do as system designers will not be accepted, because of the problem of intelligibility of the language used. The only sensible course would seem to let the developers of the next generation in IS methodologies take what advantage they can of the best of these ideas, just as Dietz, Stamper and others have tried to do. But the lessons regarding adoption that were raised by Lyytinen in 3.4 above must still be noted.

4 TWO SUGGESTED ADDITIONAL CONCEPTUAL MODELS

This section introduces two possible models that address some of the additional perspectives suggested by a more philosophical approach, based on this author's reading and working experience.

4.1 The Cycle of Human Endeavour in Groups

Figure 2 shows a rich picture illustrating this author's view of the cyclic nature of human endeavour where a group of humans, possibly aided by machines, is working to a plan in order to produce a result. Clearly the group doing the work has to balance a diverse range of influences. The screw-tightened vice represents the "squeeze" of pressure on the group, which partly reflects pressure on their manager. The asterisk in the "The Result" cloud is there to remind the reader that results are not only what the bean counters measure – they reflect whatever reaction anyone affected has to both the outcome and the way it was done. The customer reacts to product or service quality, but the stakeholder and manager may only react to the data the organisation deems it should measure.

If things do not go well, then pressure from the stakeholders, customers or the media pressurises the organisation (or external regulators) to introduce extra measurement and control procedures. These rarely ever get rolled back, so there is a gradual proliferation of overheads and "dumbing down" of the group's contribution.

This example shows how in some of the considerations that are addressed by the philosophies in sections 3.3 to 3.5 above can be brought into the designer's consideration. The challenge for the designer is to recognize which of these
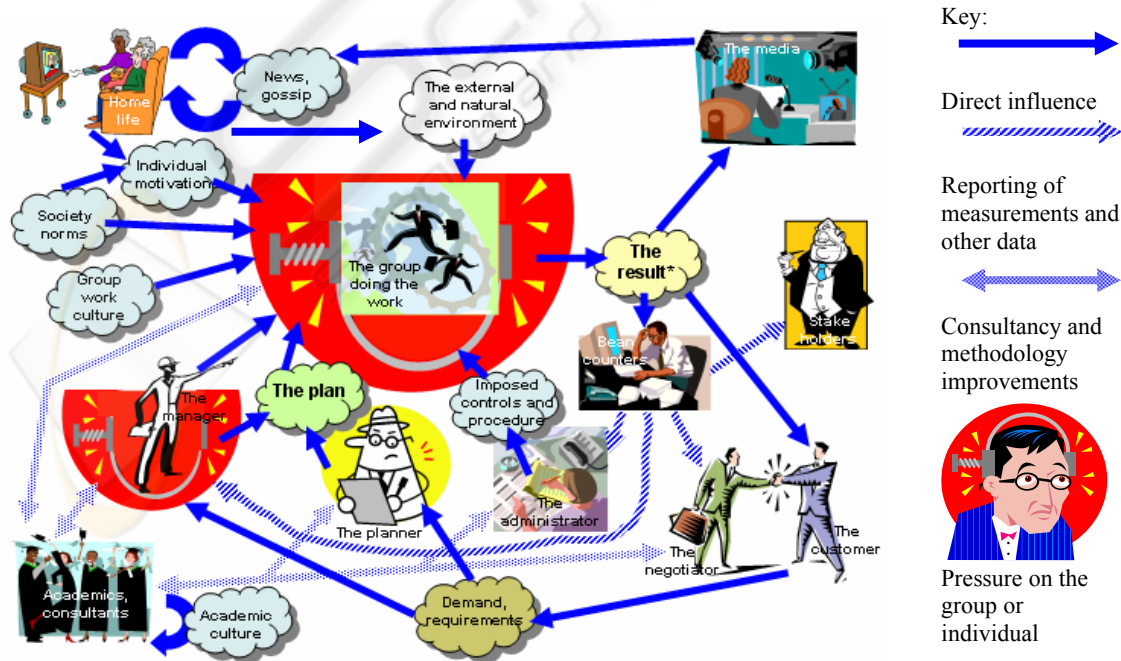

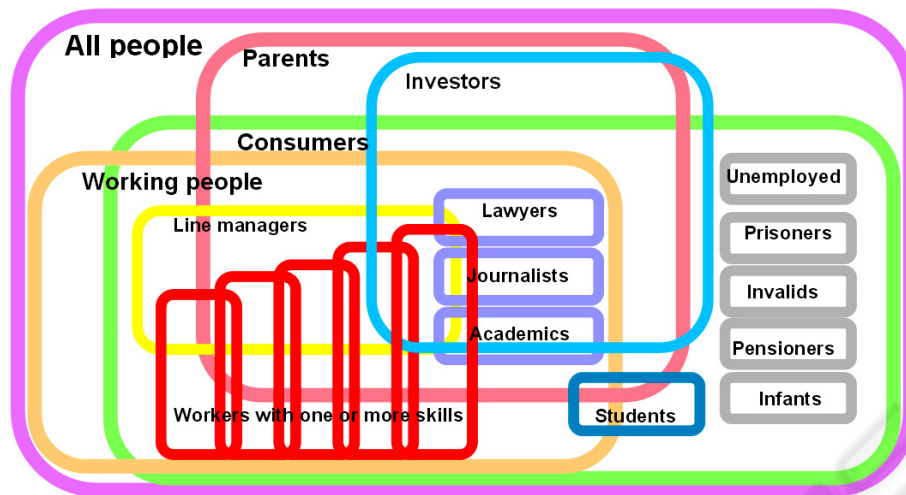Figure 2: Cycle of Human and Group Endeavour.

Figure 3: Overlapping Roles and Motivations.

considerations are critical to the success of any proposed support system - something that asking the people involved does not always easily reveal.

4.2 The Structure of Roles and Motivations

Figure 3 is a Venn-style diagram that shows a wide selection of roles that humans in a group may play (many of them simultaneously). What motivates individuals in a group is therefore a complex matter.

Some examples of motivation that may apply are ensuring personal safety, reducing uncertainty, saving enough for a rainy day, building a strong base for later, achieving ambitions, completing milestones, enjoying the present, providing for one's children, getting promotion, gaining fame, seeing procedures observed, achieving targets, reducing or avoiding pain or embarrassment, not to be shown up as a loser, avoiding climb-downs.

5 CONCLUSIONS

As the last two models demonstrate, we should include the "missing perspectives" in our models. Projects and systems may fail because they do not take these perspectives into account. Examples are that a solution may simply take too long to achieve; control and data collection turns out too expensive; or genuine concerns do not get raised. Sometimes, they are left out because they are not considered measurable, or not on the list of KPIs (key performance indicators) - but they can still cause failure.

We should accept that human nature may be changeable, but only very slowly. We should deliberately encourage a "Plan B" discipline, and recognize humans' need for an "escape route". We should understand how to concentrate on getting the critical things right, rather than correctly following a procedure. We should understand that we, as agents of change, are also part of the problem. We should also understand that language may be critical in the communication between, say designers in two organizations A and B, or between users, technical specialists, decision makers (and those that have influence over them) within the same organisation.

We should try and make work enjoyable and "fun". The chairman of one of my former employers once declared that the mission of the company was "Interesting Jobs for Interesting People". Maybe the financial "bottom line" should be a constraint – not the be all and end all.

Our common motivation as humans is that we all have to make the best of our brief life here on earth. As the subtitle of Townsend's second book "Further Up The Organization" (Townsend, 1988) says, "How Groups of People Working Together for a Common Purpose Ought to Conduct Themselves for Fun and Profit."

Those of us who are academics need to take Lyytinen's lesson (Lyytinen, 2004). Theories and models are not enough unless there is a path for knowledge diffusion and clear motivators for users to adopt them. Of course, we are "part of the problem" and are driven by our own motivations, e.g. to "publish or perish" and bring PhDs to completion.

All our efforts to support group work to date are built on some implicit or explicit philosophy.

However any additional invocation of philosophy should not be directed towards preparing more models and theories, but to remind us of what perspectives we are not yet covering.

Philosophies such as those from the "grand names" are probably too far removed from what we in IT have to do from day to day, although it would certainly help if they were easier to understand.

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