Gothenburg Research Institute

The Controller's Managerial Work

Sten Jönsson

Scandinavian Management

EQUIS
ACCREDITED

School of Business,
Economics and Law
GÖTEBORG UNIVERSITY

Abstract

This article analyses a controller's action in a product development setting. An alliance context provides for a hybrid form of governance and for complexity. The analysis builds on the participants' own comments to a video-recorded clip from one of their earlier meetings with a heated exchange on proper information sharing. The analysis leads up to an application of virtue ethics to the conversation showing that the situation is emotionally loaded since participants mobilise virtues as arguments for appropriateness. The situation allows non-rational arguments and the controller can do "managerial work" to reconfirm and clarify responsibility structures. The situation invites reflection on the nature of the agency-structure interface, and a more articulated managerial role for the controller in hybrid forms of control.

Keywords: Agency, hybrid forms, Controlling, field research, direct observation.

Introduction

The intellectual roots of management control are in cybernetics (or systems theory), but the implicit frame of "management by exceptions" seems to have obscured the fact that influential authors like Anthony (1965) and Thompson (1960) have pointed to complicating, and more descriptively convincing assumptions. The drive towards more "scientific methods" in business schools after the Ford and Carnegie Foundation reports in the late 1950s generated a rush toward analytical models as the basis for managerial decision making. The "function" of management accounting in such a scenario could only be to produce the numbers that go into the decision models. The controller, consequently, became a servant to this number producing technology (to capture, store, sort and report data). Hardly a managerial role.

Simon et al. (1954) found 3 functions of accounting in their study of the controller's department, but few further studies followed. Hofstede (1968) pointed at the fact that other units could do things more effectively (benchmarking) was a valid budget argument that had effects on behavior, but only after consultants introduced benchmarking as a method much later did it become a fashion. Tomkins (1983) suggested that the everyday work of controllers should be studied as Hopwood has also, repeatedly, encouraged us to do (1983, 1994). Jönsson (2001) argued that management accounting research should be aligned with managerial work. In the meantime there has been some efforts to relate controllership to its environment. Kaplan & Johnson (1986) argued that the relevance of the numbers was lost and Kaplan was also party to influential efforts toward remedy in the ABC (Cooper & Kaplan, 1991)) and BSC (Kaplan & Norton, 2001) concepts. But, looked upon with a critical eye, heroic and admirable as these efforts are in a practice sense, they must be considered as aiming at best at restoring a cybernetic sense to controllership. The interesting aspect of these efforts is their starting point in reasoning on strategic decisions by management. By the same token the traditional conception of controllership is rendered obsolete, e.g., in Simons (1991:49), who found that control systems are not always used to "manage by exception" but managers also use systems interactively, if only during short periods, to promote innovation, change, and learning. Tomkins (2001), exploring the interaction between trust and information in alliances and networks, indicates that we need to develop theory to eliminate the current gap in our knowledge. He points to the social bonds, and as a consequence, obligations, between parties that emerge with regular patterns of transaction.

The gist of the argument above is that ontological assumption behind the traditional management control discourse i.e., the assumption that the organization is a hierarchy disciplined from the top, must be reconsidered in the light of changes in organising practices over the last few decades. The fact that we have a lively debate (Granovetter, 1985, Williamson, 1990, 1991, Grandori & Soda, 1995, Ménard, 1995, 2002, Heckscher & Donellon, 1994, Lane end

Bachmann, 1998, Hodgson, 2004) on the extent and types of hybrid organization is testimony to this need. Mergers & acquisitions, alliances, joint ventures, networks, and projects abound while the controller in such hybrids is largely left unsupported by research. In the unstructured contexts as those implied by hybrids the way ahead in finding a productive role for the controller is via participation in morphogenesis, i.e., managerial work.

One reason why the work of the controller is seriously put to the test in hybrid organizations is that such organizations, by definition, have legitimate variety in priorities and interests at the centre. Members of an alliance between firms in the car industry, to take an example, compete and cooperate at the same time, members of industrial networks, like those related to aircraft production, may see opportunities to improve their position as the whole network adapts to external shocks, like September 11. In such cases structures crumble and new ones need to be erected. Also in the management of product development projects of some size – the project management team being constituted of experts in different functional areas (like electronics, transmission, styling etc.) – the controller needs to work creatively to build and maintain responsibility structures in the face of conflicting values. This, again, requires activity to establish and uphold structures that reporting can be aligned with.

This article aims to provide a contribution to the development of theory to eliminate the fundamental knowledge gap that exists at the frontier between the instrumental/rational aspects of "normal" controller work and the emotional/ethical aspects of the "managerial" controller work of establishing and maintaining structures of trust and responsibility.

In order to do this I need first to discuss the nature, in terms of complexity and "hybrid-ness" of the situations where the need for structuration emerges. I will then introduce a setting of that kind where a controller participates in managerial dialogue and seizes an opportunity to enhance actor responsibility taking by demonstrating concern for the need for proper premises for actors to live up to the formal accountability requirements of the organization. Thereby creating a bond that (probably) does more for target costing than formal cost estimates. The discussion ends with some reflection concerning the methodological issues involved in close observation of "special cases."

Hybrid and complex – the everyday situation for many controllers

The hybrid organization

A Google search for "hybrid organization" generates about 40.000 hits in a fraction of a second. Something must be going on out there since the concept seems to be of fairly recent origin. Grandori & Soda (1995), who review the research on inter-firm networks, trace it's origin from the need to occupy the space between Williamson's Markets and Hierarchies. Williamson (1991) characterised networks as "hybrid forms" between the two poles (and thereby preserved a transaction cost perspective), while Powell (1990, 1991) claims that networks have properties that are qualitatively different from Williamson's categories. Grandori & Soda (1995, p. 185) use the definition "cooperative game with partner-specific communication." In their characterisation of the determinants of this cooperative game they use the variables/dimensions

-differentiation
- intensity of inter-firm dependency/asymmetry in resources
- number of units
- complexity of activities
- transition costs/self change,
and identify 10 basic coordination mechanisms found in the literature.

In his discussion of the characteristics of hybrid organization Menard (2002), in an address to the International Society of New Institutional Economics, points to the need for safeguards in such organizations, to prevent opportunistic behaviour and avoid mis-coordination, as determining factors. Since the perfect contract is unattainable, and since the contributions of the different parties are, by definition, virtually impossible to measure other regulating mechanisms are required. Reputation (cf. "shadow of the future" according to Axelrod (1984)), negotiations, and granting formal authority to a specific unit to settle disputes, are mechanisms discussed in the literature.

It seems to be the case that the distinguishing trait of hybrid organizations is the presence of multiple legitimate interests at the core of the organization. Further, members realise and accept as a fact that they are mutually dependent of each other's resources (and benevolence) for success, and, finally, there is a need for safeguards to regulate the fair sharing of benefits.

Complexity

Complexity is virtually eliminated from managerial thought as outcomes are translated to one dimension (cash flows). But managers, who find themselves in

situations of un-order and change, experience this particular situation and are expected to act with reason here and now. Then translating all variables into cash flows does not help (except for those who are not accountable). Granted that organizations are complex (and dynamic) systems (Dooley & Van de Ven, 1999) one needs to differentiate between outside views (etic, as it were; Pike, 1967) and inside views (emic) of the experience. This study tries to use the emic.

When chaos theory is brought up in management studies to deal with complex dynamics the perspective is usually etic. The task of the researcher is to discover the causal factors that lie behind the observed time series. This is only natural since the ideas are brought over from natural science, and it means that complexity is seen as a property of the system rather than something experienced by the observer. This property – "an apparently random, but deterministically driven behavior" (Thiétart & Forgues, 1995:19) – can, further be analysed closer for different types (Dooley & Van de Ven, 1999). The latter authors discuss as if a time series of data from the observed system is already available (an assumption that cannot be upheld if we are considering a manager that has to act here and now), and classify the patterns on the basis of dimensionality of causality (the number of independent variables affecting the system), and nature of the interaction between causal factors (whether or not there is interaction between the independent variables). If many causal factors act independently and randomly on the system white noise will be observed. If factors interact other (patterned) coloured noise will be observed. Such introductions of chaos theory generate propositions that provide classifications and exhortations to further research. We usually relate them to the fascinating idea of the "butterfly effect" (small cause indirectly generating a big effect). This is the case of chaotic behaviour with a "strange attractor" (Thiétart & Forgues, 1995:20f.). The attractor creates an implicit order within chaos. In their discussion of the chaotic state these authors point to Feigenbaum (1978), who showed that systems changes in and out of chaos when the strength of the links between variables (or subsystems) shift. This makes us aware of the fact that something can be learned in connection with such shifts, and of the need to observe the "system" at different levels of analysis (like the management team seen both as the individuals and as a group). Another property of chaotic systems is time irreversibility.

Provisionally it seems attractive to start from the premises that one could observe islands of order in chaos, that organizing will be something akin to forging links to such "attractors", and that these will be accomplished by managers with varying experiences and competencies together in communication concerning "problems". Such managerial situations are inherently complex, i.e., there is not enough information to see stable patterns, there is not enough time to investigate, members have different experiential bases for judging appropriateness, and there are multiple sources of influence from the environment. This scenario is likely to be recognised by manager and researcher alike. The difference between the two is (probably) that for the manager the struggle for order is the normal condition. Like Barnard (1946:4f.) said:

> ".. much of what we regard as reliable, foreseeable, and stable is so obviously a result of formally organized effort that it is readily believed that organized effort is normally successful, that failure of organization is abnormal […] But in fact, successful cooperation in or by formal organizations is the abnormal, not the normal condition."

For the observer on the other hand there are models of normalcy that provide standards for comparison (economists have their equilibrium). But even those standards are questioned by some (Weick 2003). The researcher observing or collecting data guided by conjectures (Popper, 1959) derived from established theory may miss significant data, and be at a loss to explain the exceptions from academic orthodoxy, having to take refuge in cover-it-all concepts (like "moral hazard.") This article will try the opposite road to a theory-driven approach and build on detailed observation data from actual problem solving in management teams where competent managers make sense of and deal with complexity. Data-driven theorising will then seek approaches to explanation based on an assumption of competence and sincerity in the observed managers. This article is written with a bias toward chaos theory and hybrid organization as reasonable descriptors of the setting. Furthermore, true to ethnomethodology (Agar, 1986), the analysis tries to avoid basing conclusions in mentalist concepts, staying with the observable facts of what people said in the meeting, and what they said in explanation of their and others' action when reviewing clips from meeting videos. Only one situation from the field can be used to illustrate the effects of complexity on the role of the controller. There is no claim that this situation is representative of controllership in general, just that it is factual and involved competent individuals.

The setting

Data for this illustration have been gathered from the joint venture set up in 1992 by the Mitsubishi - Volvo alliance in Born in southern Holland to produce competing cars (the Carisma and the S/V 40), based in a joint technical platform, on the same assembly line. The alliance tried to integrate Japanese lean production philosophy with Swedish customer-value-through-safety thinking. The Volvo side conducted its development of new models on site in Holland even if it drew on central R&D resources (Mitsubishi's development is based in Japan.). This meant that the Volvo design engineers were removed from their usual environment and located in a different and more sensitive situation. They worked in English and were supposed to seek commonality in solutions with the Japanese partner. The fact that the production company was a separate, jointly owned, unit, meant that the effects of design solutions on costs and timing in the production process had to be negotiated. Co-operation with suppliers, not

least concerning common parts, in the development phase was also desirable; engineers had to travel between suppliers all over the world to co-ordinate solutions.

Co-ordination of the project does (shifting to the present form of verbs) not only mean negotiating agreements with suppliers, but also attending a large number of meetings where commitments of different kinds are made (e.g., business area, Executive Committee New Projects, Design review meeting, Action groups, Engine department, alliance committees of many kinds). Most binding are negotiated agreements with the alliance partner, and with representatives of the joint venture, but also the line departments of the home organisation may have very strong commitments to a certain solution due to the family concept of the cars sold under the same brand. Complexity takes the form of contradictory claims based in incompatible logics, as well as compromises, and a sense of lack of freedom to choose, while being responsible.

A complication, which is due to the compressed time frame for car development, is that it is difficult for the organisation to learn from earlier projects, since they overlap in time. The traditional "white books" reporting experiences at the end of the project will not be of much use since two new year-models are already under way when the current one finishes. Some engineers will have to work for more than one project in this era of lean organisation.

A further complication is that this is an alliance between competitors and the purpose is to produce, in a jointly owned production plant, two different cars, the Carisma and the V/S 40, on the same platform. A platform is a standard solution to many of the technical systems and components that go into a car. There are economies of scale if many parts are common, but on the other hand, if all parts were common it would be difficult to compete. Obviously the basic geometry of the two cars must be the same to fit the production process, but each partner designs specific features into its car to make it attractive for the market niche it is intended for. Commonality was a priority from the beginning of the alliance, but experience shows that the proportion of common parts tends to decrease over time.

As to responsibilities it should first be noted that the production company is a captive organisation in the sense that its owners are also its customers. The customers sit on the Board of Directors pushing hard for cost reductions, while the owners wait at the output gate for first rate quality cars, preferably in many variants to satisfy differing market demands.

The control instrument from the owners of the production company is a business plan (and its derived budgets) that specifies volumes and costs, often with strict cost reduction requirements. Any change in tooling or process equipment that is caused by a change in design will have to find its way into the relevant budgets of the production company and be approved at a fairly high organisational level. At the same time the responsible design engineer, captured in the target costing framework, is responsible for all costs related to a change

in design, but he has to get information on process costs from the production company (under a lean regime).

Engineering responsibility seems to have different meaning for the two partners. Mitsubishi, being a volume producer pursues economies of scale and low cost, while Volvo, having nothing against low cost per se pursues customer value. This justifies engineers coming up with better solutions (esp. if they promise higher customer value), which, in turn, lead to late changes with stress on Logistics and Production Control. The Production Control department prefers to deal with Mitsubishi engineers, who keep their focus on realising the original specification of a new car model, which makes life, and planning, easier.

Data gathering

Over a period of 3 years meetings of the project management group (PMG, with about 20 members) of two year model projects for the existing S and V 40 models were video filmed at regular intervals. From the video-film of a meeting 5 – 6 sequences of 1 – 2 minutes have been edited to a separate tape. These sequences were then shown, one by one, to individual members of the group with the question "What goes on here?". The comments were audio taped and transcribed. For each sequence we thus have 15 or more comments, usually dealing with background to the issue at hand and interpretations and implications of actor behaviour. The confrontations with the video sequences were done about 3 months after the meeting in question. About 100 interviews with members and other actors related to these PMGs (the 1998 and 1999 year models) have also been made.

The situation

The 1999 year model project is about halfway through. Target costing is beginning to assert pressure on the project. This is done through regular Cost Review Meetings (CRM) where responsible engineers are interrogated over two days on every component in their area of responsibility. Cost Engineering, which is part of the production company, ask for explanations for estimates above targets. The project controller is present throughout the two days, mostly in the role of supporter to the responsible engineer (The project is divided into STs, "System Tasks" (Engine, Transmission etc.), each with an engineer heading that task.). When Cost Engineering compile the last cost estimates per component they have access to estimated process and tool costs in production (provided by the joint production company, but not always reported to the responsible engineer). Al, who is responsible for "Chassi and Installation," had been subject to a couple of nasty surprises in a recent CRM. He was confronted with cost overdrafts that he could not account for. Cost Engineering knew more than he did on vital cost estimates in his area of responsibility! How can he do anything about those costs if he is not informed about them, and what does it mean to be responsible for the cost effects of your design solutions?

The scene is a Project Management Meeting for the 1999 year model of Volvo S/V 40. We are about 2.5 hours into it and we are on the section of the agenda where the responsible engineers report on the status of their area (in relation to Stage/Gate™, Target costs, Action points, etc.). Bob, from the production company representing Production Control, is on one of his short visits to the bi-weekly PMG meeting. He usually has no time to attend, and when he does it is only at part of the meeting. Now he is present and Al grabs the opportunity to complain about Production Control failing to update him on process and tool costs. The recent CRM had been frustrating for Al since he was exposed as uninformed about the costs of his own area of responsibility. He wanted to confront Bob with the issue in the PMG so that the project leader could do something about it. This is important for Al since in Volvo the rule is strict that the responsible engineer (e.g., for Chassi and Installation) is responsible for all costs, without exception, due to design changes in relation to the original specification of the project. Al says he has a contract with the project leader (and the rest of the hierarchy) to deliver the specified Chassi-content of the project in time, inside budget, and target cost. His job is complex because when other areas (like Electricity, or Transmission) do design changes they will usually have repercussions on his area. Anybody who has had a look into the engine bay of a modern car will realise that space is scarce and a change in electronic processors may easily result in changes in positions of cables and connectors. The crucial documents for these changes are the PECs (Product Engineering Change) and their attached "Yellow forms", that specify investment consequences of design changes. The sum of such "yellow form" investments goes into the production company budget as addition to the "Business Plan" – the budget that is based on the original project content. Since Volvo has caused the extra investment by changing the design Volvo has to authorise the change in the investment budget before the production company can start to spend the money.

The production company is under strong pressure from its owners (Volvo Car and Mitsubishi Motor) to apply lean production. The budget for investment in production facilities and tools has been trimmed to the limit in order to minimise costs per car at the given volume and product mix agreed in the basic plan. The budget consequences of changes will have to be covered by the initiator. But the production company sees the investment budget as a lump sum budget, if they can reduce the investment cost by finding synergies between the different investments in the process, the benefit should belong to Production. A good Production Control manager will earn praise for buffering the investment budget. Further design changes will often require re-scheduling of the logistics surrounding the assembly line. One way to avoid this extra work for the already stretched Production Control staff is to discourage these design changes. Why can't the Volvo people learn to behave professionally like the Mitsubishi people. If you have a great improvement idea it will have to wait until the next project. Why can't they design the car to specification like good engineers do?

The Business Plan is based on the original specification of the car contained in Design Concept Sheets, which sometimes are not that specific. If you want to do a design change you had better ask Production Control about cost consequences early on in order to avoid spending engineering hours on a change that turns out to be unfeasible. The problem is that asking Production Control means that you force them to spend engineering hours, and Production Control does not want to spend scarce resources on wild goose chases. So the wise design engineer will take a production control colleague to lunch or for a beer and do some sketching on a napkin asking for a best guess. Questions are asked on incomplete specifications and answers are preliminary. Often the project and Production Control appoint Activity Teams, with members from both sides, to discuss process consequences of contemplated design changes. When the project has decided to carry out the change a PEC and the accompanying "Yellow Form" is issued with a more definite estimate of the process investment consequences. All these investment consequences are checked by the project controller and then confirmed by the Volvo representative in the Board of Directors of the production company, and added to its budget.

This illustrates part of the rules of the game under which development work is conducted inside this alliance. Once the rules are agreed between the parties individual actors begin to find innovative ways to circumvent rules that inflict delay or costs on them in their particular mission. Structures have to be reconfirmed and invented continuously.

The scene:

PMG-meeting, 1999 year model, 1.5 years before launch.

Participants:
Al: ST manager, Chassi and Installation
Bob: Production Control, production company
Charles: ST manager, Body
David: Project leader
Eric: ST manager, Electricity
Fred: representing Product Planning (marketing side)
George: Project controller
(Each ST is subdivided into a number of CTs ("construction tasks;" like doors, brake system etc.))

- Start of sequence -

1 Al: .. during the CRMs we had the cost engineering guys from [the
2 production company] here coming in saying that this is going to cost
you 3   this and this is going to cost you that and my CTs and
4 myself have not heard about these costs ... and while you are here Bob...
I 5   sent you a memo on this <lower voice> I don't know whether you

6 agree...but I don't know where all these costs come from... we can't find
7 them in PECs we can't find any memos and some of them have not even
8 been discussed properly in activity teams.

<Charles is trying to break in>

9 Bob: Costs come from the basic plan and from issues..... yeah I suppose
10   now they are updated... and in those... that document you find the
11   investments

12   David: But isn't it normal that you have it also in PECs?

13   Bob: Initially that is not needed!

14   Erik: But if the investment is dependent upon the technical design that we 15   do? But if you don't get the feedback that this will cost you that much!?

16   Bob: But, listen! We have sheets for design... design concept sheets. That 17   is correct, so we know the design. We report then in the cost integrated
18   plan [?] So you can discuss with these departments about the cost of
19   course.. no problem.. if you are okay on that then you know that this will 20   be the cost for this project. If you change the design then you have a
21   problem!

22   Fred: Then you will see it on the PECs

23   Eric: I had the same experience as Al! The first time I saw these costs was 24   when I got a thick booklet <showing with the fingers how thick a pile of 25   paper it was> .. and when I read it through it said "investment in final
26   assembly"! I never heard of it! It had never been reported to me nor my
27   CTs! It is not implemented in yellow forms, I don't have a budget for it! I 28   don't know what it is!

29   Bob: I don't report to CTs, not even to STs

30   Eric: Then it is not my problem, because I don't take the cost!

31   George: But Bob! If we do not have corresponding figures between

32   the sum of the yellow sheets and the basic plan we cannot sign the
33   basic plan. We don't have those costs in the PECs, therefore we do not
34   have them in the yellow sheets. So we need to have the PECs updated,
35   and the costs splitted up (sic!) per CT!

36   Bob: No need. There is no need to have that additional invest-
ment on the 37   PECs

38   George: Yes

39   Bob: Why?

40   George: Because we need to penetrate those costs as well as all other costs 41   per CT and it is the ST's responsibility to say if these figures are correct or 42   not. The basic plan is just the sum of all costs and when that sum fits with 43   the sum of our yellow forms then the basic plan is okay. If it is not the
44   same sum then it is not okay!

- End of sequence -

What goes on here? (The 'ontic')

Al complains because he was embarrassed in a recent CRM by not being able to account for above target costs in his area of responsibility. Checking with his subordinates he finds that Production Control has registered tool and process investment costs with his ST without informing him. Bob indicates that this is what happens when you change the design in relation to the original specifica-tion on which the "basic plan" is built. Territory is invoked. George the con-troller settles the matter by indicating that he is the one who checks the added investment budget (due to design changes) for the Volvo side (and if he does not get the figures "splitted up" to the CT level he will not accept it. Bob's solution – to avoid those design changes – does not fly.

   This incident and the action taken by the project leader lead to the develop-ment of a more detailed set of rules for the interaction between projects and Production Control (designated window persons etc.). It also lead to the replace-ment of Bob with a more "flexible" person as member of the PMG. Structures on the interface between areas of responsibility became more articulated. (But accomplished players still take Production Control people out for a beer when they need early information on cost consequences.)

Comments (The ontologic)

Actors

When reviewing the video sequence Al, a British national, expresses satisfaction with the fact that he was the one who brought this issue up "in public." Bob had exhibited the same lack of understanding for how Volvo runs their project when Al had talked face-to-face with him before the meeting. Al regrets that the matter was not solved at the meeting, and he is still (a couple of months later) not clear whether it will ever be solved. Al, who is on his first ST job, says that he is upset about the fact that you get these "final assembly costs" too late to do anything about them, and on top of that you have the wrath of Headquarters for not keeping within the budget. He gives examples to illustrate.

David, the project leader, says that this illustrates how ways of working confront. The Volvo way to have ST managers strictly responsible across all functions, while the production company is subject to traditional budget control. He explains that the "basic plan" is based on the original specification (Design Concept Sheets (DCS)) while Cost Engineering work exclusively on PECs (released final technical solutions). This generates a "grey zone" for target costing in the period between the DCS and the PEC.

Changes to the investment figures in the Basic Plan of the production company require board meeting decisions, usually as a lump sum. That is why George, the controller, has to keep track of how it is allocated to the different STs and CTs before it is accepted. There is in fact no contradiction here since everybody wants the production company to have an effective process, and technical solutions should promote that end – without giving up on customer value properties in the product. David explains and argues for the broader perspective, even uses harmony as a descriptive term.

George, the controller, starts out by giving the background to this discussion. The CRMs is the main forum for cost follow ups, component by component. Sure there is a project budget with engineering hours etc. but the basis for that budget is shifting as features and solutions are added to the continuously. If, e.g., the Quality department has found something that will improve the value of the car it is stupid not to introduce it as soon as possible! The CRMs are based in the most recent data from Cost Engineering and the Costing Group of the production company. It turns out that the yellow sheets (investment estimates that are originally related to the Design Concept Sheets and supposed to be refined as the project proceeds toward production start) are not properly updated for design changes. This means that the responsible engineers do not have the full cost picture when they take their decisions. They are agitated in this meeting and ask for David's support. How can they assume responsibility if they are not informed about all costs? Bob claims that the board of the production company takes its investment decision on the lump sum for investment in the basic plan.

That expenditure is justified by added processing value, less waste etc. and he thinks that is all what is needed to get the decision. George doesn't think so. His strategy at present is to ask somebody from Production Control to be present at the CRMs and explain their investment and tool cost figures. They will probably come around and comply, but not during this project. He is optimistic about this because the production company itself has complained to Volvo that design engineers do not pay enough attention to the effects in final assembly of their design changes. This is a matter on the production company board now and in that forum it will be easy to posit that a prerequisite for such attention is that the design engineers are provided with the proper information.

George gives an account for his hard work to try to reconcile the figures from the yellow forms with component costs, and with the proposed Basic Plan. David, the project leader, has to sign the Basic Plan before it is presented to the production company board. For them the important document is the Basic Plan, for the project it is the yellow forms. David has not signed the plan yet and the Production Control has not come up with the required details, "and there we stand". The main reason seems to be that Production Control is short on staff, but there is also disagreement within the production company. The Cost Group (a small accounting department) wants to clear out this mess, but it seems like Bob wants to run it his way. Anyway, the interface will be smoother now that Bob is going to be replaced on the PMG by an assistant with experience from both sides. But still we don't know how willing the top of the production company is to be forthcoming with more detailed cost information (they are, after all under a strict lean production regime and need to buffer their budget). George's comments focus on procedures and reconciliation of cost figures across responsibilities.

Eric, a fairly newly appointed ST manager, says: "Well, this is not really about costs but about ways of working." There is no set procedure for dealing with how design engineers can get the necessary information from Production. It is not only cost figures, it is also how a design change will effect assembly time. A saving of assembly time might justify the investment in process. Now he has to work without reliable information, and George has to put a lot of work into splitting up the lump sum reported by the production company on STs and their subunits. Eric illustrates with stories and also points out that in fact Bob does not know the realities of the problem. He bases his comments on some ideal model (which does not have a real life correspondence). In real life there must be direct contact between many engineers on both side. Using the project leader and Bob as window persons generates a bottle neck. All this illustrates that we do not understand fully how it works down there (inside the production company) and they do not see how we work. Eric also comments on how it has become more and more important to know exactly for which project you are working and who is paying. If it is a quality problem the Quality department may be willing to finance. If the solution may be introduced as a "running change" matters will

be different. There are always several different projects under way and the same engineer may be engaged in several projects. We have to know the cost in detail related to our responsibility.

Eric's comments illustrate how more complex the responsibility of the ST engineer is now when there is a continuous flow of new year model project, intermixed with running changes and quality improvement projects initiated by the Quality department.

We have not been able to obtain comments from Bob to this sequence.

Non-speakers

Members who did not participate in this particular discussion tended to give more wide ranging comments when reviewing the video clip with the sequence. They usually started out by stating their recognition of Al's situation by telling a similar story from their own experience. Whereby they demonstrated sympathy for Al's action ("He said what needed to be said"), but they also showed how upset they were about how the current deficiencies in the "interfacing" between the alliance partners (granted that a number of projects were under way to improve the situation) prevented them from living up to their cost responsibilities. Senior members would point to informal channels they use to get the information they need (Al and Eric are newcomers). The controller is seldom mentioned, but when it happens he is described as somebody who is on their side – helping to sort things out. A particular item that a few touched upon was the curious defence of the lump sum budget for added process investment that Bob seemed so keen to engage in. It probably is because there is slack in it. (When we follow this up in the production company our respondent, mr Yoshi (recruited from Mitsubishi) in charge of process development, explains that he works against the lump sum budget in planning investment. If he can do it cheaper by finding synergies between projects he can carry over the surplus to the next year. By having this buffer he can deliver also under adverse conditions.)

Analysis (The 'epistomologic')

Clearly this exchange is coloured by the fact that it takes place in a hybrid organization setting. The production company is a joint venture between a lean (mass) production (Mitsubishi) and customer value seeking (Volvo) company. One stresses the cost side and the other the revenue side. In interviews we heard many a comment on the benefits of combining low costs with high prices. The problem is that both these approaches are built on fundamental principles that tend to contradict each other on the operative level. In cases of disagreement

matters are brought up to superior organizational levels. One way to manage such conflicts is to refer them back and tell people to work it out among themselves. The result is constant negotiation on all levels. It then is legitimate to argue for "our" view against "theirs." Arenas are set up for dealing with minor (activity teams) and major issues (joint venture board of directors). In most difficult decision situations matters become extra complicated because there are new codes of conduct emerging in response to the hybrid form of organization and to complexity. In this sense the situation generates its own dynamic. The "situation" is a moving one.

The question to seek an answer to now is: How does a competent controller act in a situation like this?

First we can see that in the sequence itself George acts (lines 31- 35 and 40 – 44) to back up Al's request by indicating that he (George) has the (real) hierarchical power to accept the additions to the investment budget of the production company. He is mobilising an argument that is likely to be relevant in Bob's (hierarchical) vocabulary. By doing this he demonstrates that he works to improve the conditions for the engineers to assume full responsibility for all consequences of their design changes. He is on their side. By being an insider he is a legitimate participant in the ongoing construction of accountability. This situation can be read as emotionally charged, which provides an opportunity for clarification of structures.

Second, the content of George's argument, as well as comments about him by other project members, show that he is an actor on the board level of the joint venture, as well as a participant in CRM meetings, and in "yellow form" updating/verification, etc. He can promote "management control" in many ways and in different arenas, but it seems like he can only do it in "bits and pieces" as situations arise. His main strategy seems to be to bank on the sense of responsibility built into the role of the lead design engineers – it is appropriate for design engineers to "take responsibility" for the effects of design changes in the production process. This is a norm that engineers live by. The standard form of presentation of new design solutions in the PMG was compressed in the saying "Technology, Time, Cost," indicating the necessary headings for such presentations. By demonstrating care about (sympathy for) the engineers' need to have a reasonable basis for assuming responsibility he asserts moral pressure on them to act appropriately, in presentations as well as in working out the solutions. The cost aspect is not the primary one, though, since the strategy of Volvo is to be in the premium segment of the product market. This revenue (rather than cost) orientation is articulated in the values included in the brand. Traditionally they used to be safety and quality. Later environmental care and in the beginning of the 1990s more premium values were added. Also traditionally, the implementation of these values have been entrusted to organizational members throughout the organization. The Swedish word for such trusted members is "medarbetare" (not yet translated to English; "trusted co-worker" might come close), and it

carries with it a willingness to take responsibility. It is the centrepiece in top management's reasoning about the brand strategy. The delegation of authority to act on behalf of the company to "medarbetare" improves the company's agility in alliance settings, which is much needed in this case. Huge amounts of information across organizational boundaries are required (design of common parts, joint negotiations with suppliers, logistics, budgets, etc.). Furthermore this particular alliance concerns only a minor part of the whole product portfolio for both partners. Attention from the top necessarily is limited. Still it is quite complicated to conduct effective project work due to the many external (to each project) coordinating committees that have been given oversight responsibility. When we asked the project leader about what decision making bodies he needs to watch (or participate in) because they make decisions that have effects on the project, we got a map of 30 such external bodies to the project (counting "suppliers" as one) (reference withheld, 2004).

Third, senior engineers, i.e., those who are well acquainted with the setting, know their way around formal obstacles to the quick flow of information required to do a good job, Junior colleagues will have to rely on manuals and formal channels initially, because procedures are different from "back home." It would be a good thing for the project if they could find access to those informal channels, but the role of controller does not allow promotion of the required moves outside the rules of the game, even if it would help the project. The controller needs to remain an insider of the formal control system in order to be a reliable negotiator on new mechanisms or structures. At the same time he wants to help engineers to get access to the information they need (he also needs this kind of access for himself) via informal channels. A significant part of the job is to manage the interface between "regimes." Hopefully his work to set up mechanisms and work parties to formalise and standardise some procedures will reduce the time span in months of service for a junior to become a senior project member. We note that Al, in the sequence above, is a junior in two respects, he is new to the project environment in the Dutch-based alliance, and he is a British engineer with limited experience of the work procedures of the home company. Al gains in standing within the project by bringing up the issue, since members can see, in due time, that this time a complaint had real consequences. A respected person can be trusted to assume the required responsibility without being interrogated about the details in meetings. Al gains respect by admitting that he came uninformed to the CRM, and indicating that he could not have been well informed due to the deficiencies of the interface between the two "regimes" in this case. This is confirmed by the argument in the sequence and the subsequent changes. Now that the new "system" allows him to be better informed the controller has gained by supporting improved formal procedures.

This incident in the flow of incidents that makes up a product development project serves to illustrate how the "business controller" role may vary in an alliance setting. Instead of (only) representing the principal in pursuit of com-

pliance with plans, the controller may serve efficiency better by working at the interface between alliance partners (and between project members). Discipline is strong on both sides although they stem from different urgencies. Rule making at the interface might be the best way to serve both customer value (differentiation) and cost leadership at the same time. In order to be en efficient forger of new rules of the game (at the interface) the controller need to build and maintain trust as a reasonable broker. In the sequence above the controller (George) asserts hierarchical power – an argument that is highly relevant in Bob's vocabulary. He (George) also demonstrates to Al that he cares about remedying the situation Al found himself in at a recent CRM by showing that he was able to put pressure on Production Control to comply. George also is able to support the central position of the project leader (David), who is not quite sure about the formal aspects of PECs and "yellow forms" (line 9). The formal solution the was implemented some months later was (1) to appoint another member of the project from Production Control who could provide better attendance to meetings, and (2) to make the project leader the window person on the project side and Bob his opposite on the Production Control side. In this manner the two central persons would be kept informed and would find reason to have contacts beside the meetings. Project members could see these structural changes as an outcome of George's efforts to provide reasonable conditions for taking responsibility for process costs resulting from design changes. Members will feel obliged to live up to their part of the bargain as their complaint was taken seriously. Of course senior engineers will continue to exploit their informal links to trusted colleagues in the production department. All in pursuit of improved project performance.

Theoretical implications

Hopefully this incident from the real life of a group of product developers in an alliance setting suffices to illustrate that the decision makers find themselves in a complex situation (causality cannot be easily traced) within a hybrid organization (there are legitimate, different interests inside the group). The evidence of this one case obviously cannot prove that this is the "normal" situation. Our estimate from the fieldwork in this study is that every one of our recorded (about) 4 hour meetings contain about 20 incidents of this problematic nature, each one a special case requiring a similar background text (20 pages) to report. It goes without saying that unproblematic work is not brought up in the PMG meetings. On the other hand it does not seem too daring a leap to link management to the activity of dealing with problematic situations. The problem with problematic situations is that they are different. Generalising from "ten thousand special cases" (Feigenbaum & McCorduck, 1983:82) would require a different approach to decisions and sense making than the conventional. As we progress from ontic considerations (What is going on here?), to ontology (what assump-

tions about the nature of the world are at play here?) and to epistemology (What is required for a statement to be considered knowledge?) the "figure" against a shifting "background" assumes a different meaning. The controller in continuous work to shape and re-shape his role to build trust and, as a consequence, competence for inclusion in rule making (leading to morphogenesis) needs to act appropriately in those situations. The controller needs to grasp the unfolding situation ("ontically") to see an opportunity to further good resource use. Part of the making sense of that situation is to assess the bases for arguments ("ontology") used by interlocutors (to repeat your own arguments from your own base (ontology) will generate little persuasive power). Only when a statement can be understood as a "fact" ("epistemology") inside the frame used by the other can the controller establish a "boundary object" (Bowker & Starr, 1999, Star, 1989) that may serve as a link between the relevant frames (or communities of practice). For the practitioner achieving "artful integration" (Suchman & Trigg, 1993) in complexity it seems necessary to work sense making on all these three levels of abstraction. In addition it is necessary to act consistently in related fora. Like when the George acts in support of Al in the CRM where Al was confronted with process costs he had not been informed about. Or when George argued the case together with the project leader that Production Control needed to replace its member of the project management group (PMG) to achieve a better attendance record, and that this opportunity should be used to appoint somebody with a better understanding of the product strategy of Volvo (which included the possibility of late design changes to achieve premium value).

To function well in the role of controller the practitioner thus needs to apply a "logic of appropriateness" (March, 1994, p. 58) in three moments:

- Identity (Who am I? Minding the trust others have in you.)
- Situation (Making sense of the situation in terms of potential paths
  toward valued outcomes.)
- Norms (What norms are at play in this situation?)

I believe that this frame for logic will be improved if we go back to the original question of Practical Reason: "What should a person like me do in a situation like this?" and note the crucial position of "do" in that question. What concerns the person asking this question is the construction of action (do) in a situation. Therefore we should "action" as the third moment and relegate "norms" to the background, since norms will be at play in all three moments. However, here action is not judged (only) by its consequentiality, but (primarily) for its appropriateness. To develop the significance of this we may mobilize Adam Smith (1759), who in his main work, "Theory of Moral Sentiments" (TMS) argued for sympathy as a fundamental driving force in our creation of civil society (community). Sympathy is a parallel feeling that others have when judging our action and it expresses the thought that 'considering the situation and your intentions what you did was the right thing to do.' When deliberating on the right thing to

do the member of the community should consider how an "impartial spectator" would judge the contemplated act and act accordingly.

This detour into the 18th century is justified by the fact that it presents an alternative to what has been called "hybrid forms" in community. If it is reasonable to accept that in complex situations, like the one in the sequence above, actors who want to enhance their own capacity to participate in the formation of solutions need to build trust, which in turn can be seen (ideally) as mutual sympathy, the following statement may be valid:… "because mutual sympathy is sought by all, each person strives to put himself into situations in which such sympathy can be obtained" (Ottesen, 2002, p. 292)). In such situation we gain sympathy by

1. trying to make others look at our situation as an impartial observer would do, considering only relevant information, and
2. disciplining ourselves so as to act and judge action by others in ways that an impartial observer would commend.

The effect of this mutual adaptation is a "community" where structures and rules emerge in support of collective values/institutions, not so much because individuals have these rules in mind, but because they are effects of collaboration. That is why we call them "unintended." Communities of practice (Wenger, 1998) can serve as intermediary between territories of bureaucratic control. By conquering a position as members of communities of practice controllers can nudge accountability and responsibility closer together (they will coincide in Adam Smith's community). The difficulty is to observe this phenomenon in action and analyse it in context.

From observation data to theory

What can be observed is what is said and done in meetings between members, like the sequence above illustrates, which presupposes that the access problem is solved. To get information on members' framing in sense making and their respective understanding of the unfolding discussion methodological innovation is called for. We offer using video clips to achieve "stimulated recall" (Bloom, 1953) for each member individually, as one way ahead. Playing back the video sequence from a meeting some time ago to a participant with the question: What is going on here?" has proven to be quite stimulating for respondents. We have recorded a maximum of 22 transcribed pages of commentary text (1.5-spaced) by one member to a 2-minute sequence. Respondents tend to focus on what happens on the screen rather than on the interviewer (with an edited story to fit the assumed level of understanding). The recall effect seems to be very strong as respondents re-live the event, seeing himself or herself in action. In a car model project (the sequence above), where the information flow is rapid and massive,

we have seen vivid recall up to 3 months after the recorded event, but one needs to be observant as to memory effects.

A striking feature when comparing several comments on the same sequence is how great the differences in understanding between participants seem to in spite of the fact that they agree to a joint decision. What does "shared information" really mean? For analysing the sequence itself a number of approaches related to "discourse analysis" offer themselves, from those with a more linguistic tilt (cf Lepper, 2000, Cooren, 2000) to those with a sociological perspective (cf Fairclough, 1992, Giddens, 1984, Foucault, 1991).

Once the sequence and the commentaries are analysed the researcher will find, as we did, that this particular event admittedly is a "special case," but that the multiplicity of dimensions and meanings that can be related to it also offer an opportunity for the researcher to make informed use of these patterned data in theorizing managerial practices in complex situations.

The signifying aspects of complexity being that (1) causal links are not easy to identify and estimate, i.e., there is little basis for calculation, and that (2) the team that provides the setting is a hybrid form, i.e., there are several legitimate, different frames at work in the team. (Should the members of a team habitually be of the same opinion it would constitute a valid reason to replace a number of members.)

If, in a complex setting, people have not been able to agree, special cases are normally brought to higher organizational levels for settlement (cf Barnard (1938), "appellate cases"), Such cases provide an opportunity to make rules, since there are many aspects and since the case is made sense of by people with different frames. A "special case" is attractive for rulemaking if one member is able to argue in terms of dimensions (virtues) that are valued by other members. The case will assume a "border object" status between the various perspectives applied by members. The bridging between these perspectives will imply celebration of some values and leave others as subtext. The arguments that justify (or provide the excuses for) the ruling will guide the treatment of similar cases in the future, and/or initiate structural changes.

The proper way to act for the controller in such situations is to apply the logic of appropriateness ("what should a person like me do in a situation like this?") and act accordingly, albeit the perspective that should guide controller action in that frame is to emphasise dimensions that will support accountability/responsibility. But, since the controller's perspective will normally be an appendix to whatever perspective that drives the value creation process of the particular organization, the control aspects must be attached with some finesse in context. Such situations will appear virtually by accident, so the controller needs to have his/her act in readiness.

Analysis II

Weber (1976, 140 ff), in tracing the roots of capitalism to "ascetic protestantism", uses the term charisma to refer to a quality of leadership that appeals to non-rational reason. To accomplish a change in modus operandi, inside a larger structure of accountability, actors need to shift "ideology" to allow space for such non-rational arguments. My claim is that such a discursive shift may occur when the situation becomes emotionally charged (like when Al "goes public" with his shame over not being fully informed about the cost consequences of his design solutions - something a prudent professional should be). When the situation emerges and the shift is possible I further claim that the non-rational arguments that are likely to mobilise a will to change are ethical, i.e., the "language" for a discussion of what goals are worthy of our continued efforts is "virtue ethics" (McCloskey, 1998, 2006). The emotional charge of the situation is generated by references to virtues, and judgement concerning the validity of arguments for "morphogenesis" is based similarly. To illustrate this argument let me go back to the sequence above and apply the classical 7 virtues[1]. (For an extended discussion of those virtues see McCloskey (2006).)

The sequence starts with Al addressing Bob with confronting Bob with the issue "where all these costs come from" (line 1 – 8). Al clearly refers to "Justice" (and by implication "Prudence") since he cannot reasonably be held responsible for costs he has not been informed about. His colleagues judges Al positively on "Courage" since he had the guts to put the issue on the agenda. (Al also in his comments to the video sequence first expresses satisfaction with the fact that he was the one who initiated this discussion – impliciation: it improves his standing among project members). Bob denies the relevance of Al's complaints by stating that the cause of Al's problems is that he has changed the design (lines 20-21 – it is not prudent to change designs in a lean production setting). But Eric recognises Al's situation, and confirms his account (line 30). (Demonstrating Faith, i.e., that he is true to the principles under which the development engineers are responsible for the cost consequences of their designs.) Bob mobilises "Prudence" in claiming that he is not obliged to report to people like Eric. Eric reiterates ("Justice") that if Bob does not report he cannot charge the cost to Eric's CT. Now George, the controller, intervenes (lines 31 – 44) demonstrating "Courage" (confronting Bob) as well as "Love" (benevolence towards Al and his colleagues) in the eyes of project members by presenting arguments for their view that are relevant to Bob. The use of "we" implies that it is George <u>and</u> his boss who sits on the Board of Directors of the production company who need the "splitted up" costs. The aftermath to this exchange in the form of changes rules of the game confirms that Al's complaint and George's intervention were justified and prudent. Both gain in status (Adam Smith's "sympathy") in the team.

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[1] Courage, Justice, Temperance, Prudence, Hope, Faith, Love.

The "managerial work" performed by George in this situation is to demonstrate Love (benevolence) and "Faith" (loyalty) to his engineering colleagues, which demands "reciprocal faith" in the form of sustained efforts to meet cost targets. This reciprocity requirement is not of an exchange kind, it is obliging. When the project colleagues apply the logic of appropriateness asking themselves "What should a person like me do in a situation like this" the answer is one "should" assume responsibility for process and tool costs in design decisions.

Implications

The argument for the approach to controllership indicated above is that there will be an unbroken line from the ontic, via the ontologic, to the epistemologic with visible shifts between levels of analysis, the micro and the macro will hang together as it were. The not so desirable aspect of this approach is that the knowledge gained will not be of a general nature as we normally understand it, applicable to a whole class of phenomena. A counter argument to this is that we see a clear example of generalisation from the single case when members extract the value dimensions of the case that justify the ruling in the "appellate case." Possibly it is time to recognise a new form of generalisation, extracting principles from special cases, i.e., by shifting the level of analysis. Oh, and there needs to be a whole new set of constructs to analyse controller behaviour in complex situations (only cognitive ones will not do). We need to pay attention to the details (even if the Devil is in there)! The resulting theories are not likely to be simple (cf. Thorngate's (1976) "impostulate of theoretical simplicity", Weick, (1999)).

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