

THE EXISTENCE AND ROLE OF FORMAL AND INFORMAL FEEDBACK IN ORGANIZATIONAL CONTROL

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Abstract

In management accounting, feedback has been considered mainly as an ex post control device offering comparative and evaluative information for managers. It has been largely analyzed within the cybernetic control theory offering quite a mechanistic way of understanding the nature of feedback in organizational control. This article takes the well-known model of organizational control by Flamholtz (1996, 1983) as an example of how feedback is seen to operate in the core control system. However, in the light of apparent and widely acknowledged limitations of formal control systems' abilities to produce all relevant information for managers, the existence and use of different forms and channels of feedback are studied in the wider context including both formal and informal control. The notions of formal and informal feedback are introduced and analyzed with the help of a qualitative case study in one Division of a large, globally operating Finnish metal industry company. This article appreciates the calls for studying more the channels and use of feedback in organizations as well as the demands for a wider understanding of feedback from being more than a part of system-based control in management accounting.

Keywords: feedback, management control, formal, informal

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1 INTRODUCTION

The call for researching feedback in management accounting

As widely acknowledged, with the help of different management control systems managers can receive necessary information in order to assist organizations to implement their strategies, make required changes and learn. In control theory, this kind of information is called feedback and it plays an important role in management control systems in order to keep the controlled entities within the intended paths of development. As organizations seek to improve their performance, feedback also helps them to make required changes; the same applies to individuals with an intention to improve their personal performance. In addition, as a control mechanism itself, feedback helps direct individual behavior towards the organizational goals.

As a term, feedback is a signal, mechanism, and process which is looped back to control the system within itself. Feedback is directive in nature. To open it up more, feedback can be interpreted either in a narrow or broad sense having both backward-directed and forward-directed loops (see e.g. Otley 1999, 369; Gardener 1985). In the traditional, narrow meaning, feedback is used as backward-directed comparative information between actual performance and pre-set goals, deviations revealing the need for corrective actions. Performance measurement system is a good example of a system which periodically gives feedback reports that indicate progress against settled performance goals. But feedback can also be considered as an input to the planning process as forward-directed information. This kind of feedforward information can be used to predict the need for corrective actions already before the actual process and any observed deviations. In other words, feedback refers to historically oriented *ex post* control and is reactive in nature, whereas feedforward refers to future oriented *ex ante* control and is proactive by nature. Although feedback may have either *ex post* or *ex ante* control functions but it is claimed to be primarily an *ex post* control device (Flamholtz, Das & Tsui 1985, 43).

When taking a closer look at the discussion of feedback in the area of management accounting, feedback is analyzed mainly within the cybernetic control theory. In addition, there are some contextual analyses of different forms of feedback or psychological explanations of how individuals receive or handle feedback (see e.g. Ouchi 1979, Lockett & Eggleton 1991). Although management literature and organizational psychology have influenced the discussion of feedback in management accounting (see e.g. Atwater & Brett 2006; Briers & Chow & Hwang & Lockett 1999; Tourish & Robson 2006), most of the discussion is still based on systems thinking and

more specifically, on the mechanistic and neutral cybernetic control theory (with a notable exception of Luckett & Eggleton 1991). In line with this, the discussion of feedback in management accounting seems to be quite dated; most of the relevant literature is from the eighties. However, it is important to notice that feedback as a concept has different meanings in different branches of science and also different connotations in peoples' minds. For example, positive feedback means typically praise in personnel management, while in electronic engineering it has a stabilizing function. In addition, people's fear of negative feedback is commonly noticed in management literature (see e.g. Morrison & Milliken 2000, Ashford & Cummings 1983; Argyris & Schön 1978, cf. Ashford & Tsui 1991, 254), which is naturally not a matter of concern in machine automation.

Perhaps the most widely used exposition of the feedback loops in organizational control comes from the work of Flamholtz (1996, 600; 1983, 155). However, also Flamholtz discusses feedback only in a formal core control system with the help of cybernetic theory, and while the literature has for long pointed out several limitations in formal systems' ability to produce all relevant information (see e.g. Argyris 1977; Preston 1986, Mintzberg 1975) and has paid notable attention to the interplay between formal and informal controls (see e.g. Tuomela 2005; Archer & Otley 1991; Burns & Scapens 2000, Simons, 1999, 1995; Clancy & Collins 1979; Hopwood 1974), the informal side of the feedback channels is missing from the core control system model of Flamholtz and, probably therefore, has remained underresearched. In management accounting literature, especially the discussion of four levers of control (beliefs and boundary systems as well as diagnostic and interactive control systems) by Simons (1995, 1999; see also Tuomela 2005) and formal and informal organizational change in terms of rules and routines by Burns and Scapens (2000) are well-known examples of theoretical frameworks acknowledging the importance of the interdependence between formal and informal controls. Balanced scorecard literature offers an example in which formal non-financial controls have come to partly replace controls that in the past were in the informal domain. The domain of informal control stressed in this article, i.e. personal relationships and communication as well as cultural values and norms (cf. Marschan, Welch & Welch 1996, 139), may be in some other research articles referred to with different terms, like sosio-ideological control (see Alvesson & Kärreman 2004).

In organizations, there are different mechanisms to assist the pursuit of organizational control, which in broad terms refers to a process of trying to influence the behaviour of organizational members in order to attain organizational objectives (Flamholtz 1980, 1996; Flamholtz et al. 1985). Some of the control mechanisms are formal, deliberately chosen while others are informal, naturally occurring (Harrison & McKinnon 2007, 100). Formal reporting systems and procedures form the core of formal control, while

examples of informal control mechanisms are personal relationships and the effects of culture (Marschan, Welch & Welch 1996, 139). Also the overall framework of control by Flamholtz (1996, 1985) includes not just the core control system, but also organizational structure (set of rules and their interrelationships), organizational culture (value system, beliefs, and core assumptions), and (the effects of the) external environment. These elements may include both formal and informal control elements and information channels. Also Otley (1999, 369) explicitly states that “Nor should the less formal uses of information be neglected; organizational cultures form and are reproduced, at least in part, by the use of approving and disapproving feedback signals of many types.” Thus, in the light of knowledge of formal and informal controls and elements to be intertwined, this research seeks to study and point out the existence, role, and interplay of formal and informal feedback processes. Further, this interplay will be judged with a view to the currently dominating systems theoretical thinking of feedback (in its broad meaning) in organizational control.

To sum up, despite of a widely accepted importance of feedback loops in organizational control, they have a surprisingly underresearched status in management accounting (see e.g. Otley 1999, 376-377).¹ Especially, there is little evidence of how these different feedback loops are being established and used in practice. In addition, feedback is by no means a simple concept and it can be understood in different ways. The research questions of this paper are twofold: *First*, how does the notion of informal feedback fit with the currently dominating system-theoretic view of feedback in management accounting literature, and *second*, how are different forms of feedback interrelated and used in organizational control? As the standpoint in this article it is argued that feedback should not be seen too mechanistically merely as a formal control tool, but it should be considered in a wider organizational and social context. In organizations, feedback is a process of sharing information, observations, suggestions, and concerns between different organizational members and organizational boundaries in order to improve both personal and organizational performance.

The case company and the methods

These questions are explored in a qualitative case study. The case is one division (Division Steelco later on) out of four of a large, globally operating Finnish listed company supplying metal-based products and services to the construction and mechanical engineering industries. The company has operations in 24 countries and employs 14,700 people (over 7000 in Finland). Net sales in 2007 totalled around EUR

¹ Instead, feedback has been studied more extensively in management and psychology (see e.g. Ashford & Tsui 1991, 251; Leung & Trotman 2005, 538–539).

3.9 billion. While Division Steelco was practically the one that we were offered access to, for us that suited as well as any other division in order to study formal and informal feedback channels at different levels of the organizational hierarchy, starting from the group level down to the local levels. Division Steelco supplies steel products to customers in their required form from works or service centers. Net sales from this division in 2007 were around EUR 2.2 billion, hence amounting to more than a half of the total sales of the company. The empirical data was mainly collected through recorded 13 open-ended and theme interviews with managers at different hierarchical levels in Steelco in Finland in Sep 2007 - xx 2008 (13 persons and app. 25 hours in total, still ongoing). It was supported by the analysis of several official and inter-company documents as well as observations during the interviews and factory visits, several informal conversations, lunches, and phone calls.

The paper is structured as follows. Firstly, the notions of formal and informal control as well as feedback are examined in the light of existing management accounting research literature. Also the main ideas of systems theory are brought forth. Secondly, the empirical case setting and findings are introduced. Finally, discussion and conclusions are provided.

2 CONCEPTUALIZING FEEDBACK IN MANAGEMENT ACCOUNTING

Feedback in cybernetic control theory and in the model of control by Flamholtz

In the management accounting literature, feedback is seen as a component of organizational control and it has largely been influenced by cybernetic control theory (see e.g. Lockett & Eggleton 1991, 371-372; Otley & Berry 1980). In the cybernetic control theory the phenomenon is studied through different information and communication systems. The main elements are a set of inputs, a process by which these inputs are transformed, a set of outputs and a feedback loop which makes the system a closed loop. Feedback provides information to the system about the nature of the outputs and this information can be used to control system's dynamic behavior.

The cybernetic model of control by Flamholtz (1996; 1985; 1983, see Figure 1 below) presents an overall core control system to be formed by five subsystems or processes: planning, operations, measurement, feedback, and evaluation-reward.

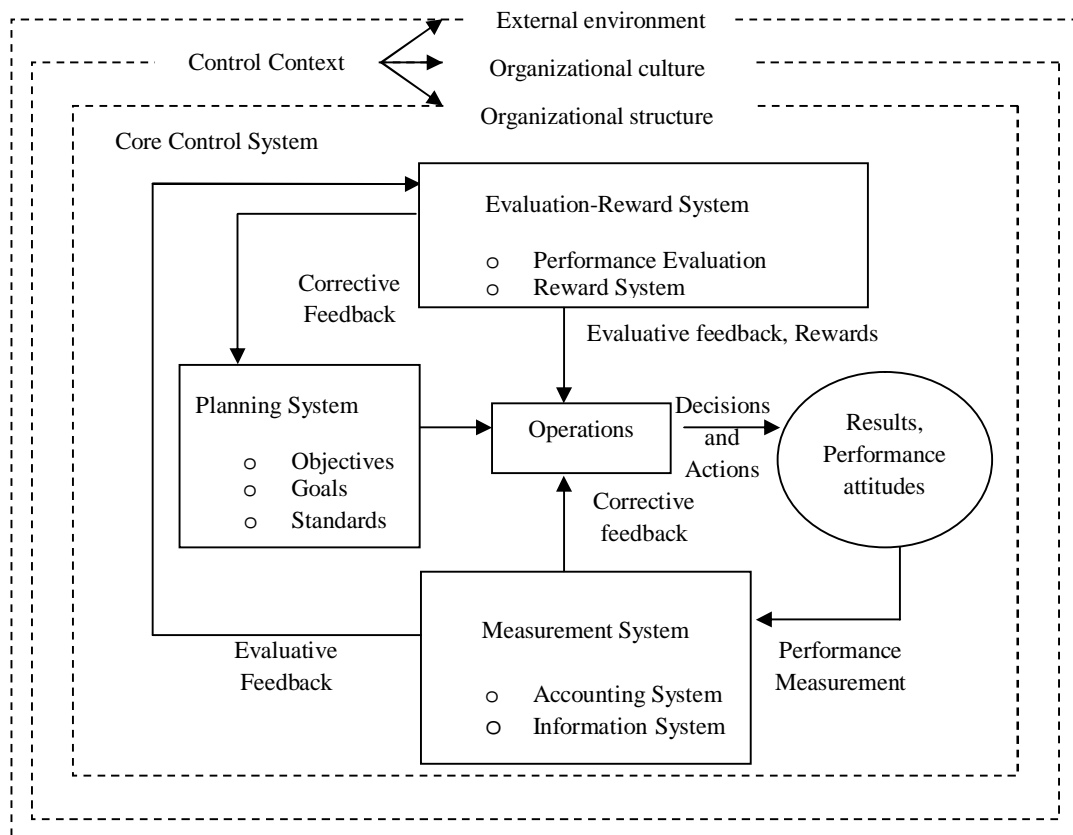


Figure 1 An integrative framework of organizational control (composed of Flamholtz et al. 1985, 38; Flamholtz 1996, 599–600; Flamholtz 1983, 155)

The model of control by Flamholtz (19996, 1985, 1983) starts from inputs, i.e. predefined goals and objectives. Numbers generated through measures provide formal feedback regarding how an organization is achieving its strategic, operational and financial goals. According to Ouchi (1979; 1977; see also Ouchi & Maguire 1975, 559–560) measurement has two functions. First, it has the output function, which serves the control needs of the organization as a whole. The other function of measurement is process function, which means that measures tend to influence the behavior of people in organizations. The use of behavior control is based on personal surveillance and thus it is a subtle and subjective process, which responds to the different needs of a task or the abilities of the individual manager as well as the norms of the company.

Because organizations do not operate in a closed system, much information comes from outside of the core control system and even outside of the organizational boundaries. In addition to the core control system, in the framework of organizational control by Flamholtz (1996, 1983) are also organizational structure (set of rules and their interrelationships), organizational culture (value system, beliefs, assumptions), and external environment. The core control system and organizational structures seem to express the formal systems and the culture informal ones. As Flamholtz (1983, 168) states: "... we have observed the crucial role not only of the formal core control system but also of an organization's culture as a mechanism of control." However, in Figure 1 feedback seems to have only formal status operating in the core control system. When considering informal aspects of control and social systems, feedback channels only in the cybernetic model are inadequate. In the empirical analysis special attention is directed towards feedback channels arising from the other subsystems, i.e. organizational structure, culture and environment as well as the interplay between them.

Figure 1 presents two types of feedback: corrective and evaluative. Deviations between actual performance and preset standard or desired level can be adjusted with the help of comparative feedback information. In these cases feedback has directional or corrective function (see. e.g. Flamholtz et al. 1985, 42). Further, Otley & Berry (1980, 236) classifies different responses as first-order control (changes to inputs), second-order control (changes to the planning system), internal learning (adjustments to the model of process), and systemic learning (changes to the process). In addition, the motivational function of feedback relates to the evaluation-reward system by providing information about outcomes associated with rewards. Evaluative feedback provides information which suggests future rewards or punishment, functioning as an incentive (see e.g. Ilgen et al. 1979, 351–352; Flamholtz et al. 1985). To sum up, in the end feedback provides information on work goal accomplishment, whether it is corrective or evaluative in nature or whether it directs behavior for correction or motivates behavior with future rewards.

Feedback and feedforward

Traditional feedback control systems with simple ex post corrective actions have limitations in their time to correct errors. Therefore there is a call for feedforward systems producing future-directed and anticipatory information that can be used as an input to the planning process as changes occur in the environment. Feedforward control aims at overcoming the problem of delay in traditional feedback systems and corrective actions may encompass revising the means and/or changing the plans or strategies (see e.g. Gardener 1985, 11; Preble 1992, 393 Otley 1999, 369). According to Nishimura (2003) feedforward control is a proactive and preventive act that is implemented for control before any variance between planned and actual values. Nishimura (2003, 158) formulates feedforward management as a circle in which plural planned values are set up and corrected according to the different environment information by means of many proactive and preventive procedures and methods. Further, Nishimura (2003, 159) states that the concept of feedforward control is not enough systematized and developed in the management accounting and he predicts: "Although feed forward control has been considered to be part of feedback control, or the planning process, until now, it will be more relatively independent of feedback control and have its peculiar function in the future."

Although Flamholtz (1983, 154) states that the cybernetic core control system has both feedback and feedforward loops, it is noteworthy that all feedback flows in that model pass through the measurement system. This would mean that only the measured aspects of performance were labeled as feedback, but in that case the interpretation of feedback is narrow, because the measurement system operates after the process. Figure 2 clarifies the relations between these typologies of in the cybernetic model of Flamholtz, but modifies it with the ideas of feedback versus feedforward by Nishimura (2003).

		Nature of feedback	
Ex post	CORRECTIVE FEEDBACK (1) < Formal Informal	EVALUATIVE FEEDBACK (3) < Formal Informal	
Ex ante	PREVENTIVE FEED-FORWARD (2) < Formal Informal	ANTICIPATORY FEED-FORWARD (4) < Formal Informal	

Figure 2 Relations between different types of feedback

Feedback is ex post and feedforward is ex ante by nature. As discussed earlier, feedback may be either corrective or evaluative. Nishimura (2003) defines feedforward as preventive and anticipatory. Both feedback and feedforward can be given formally or informally. These four different types of feedback can be illustrated with the help of well-known work of Simons' (2000, 1995) four levers of control. Simons' (1995, 2000) framework of levers of control is consisted of four subsystems; diagnostic and interactive control systems and beliefs and boundary systems. All systems yield or use different kind of information.

According to Simons (1995, 59–90) diagnostic control systems, directed to ensure the predictable goal achievement and intended strategies, is exercised through formal information systems so that organizational outcomes are monitored and deviations from preset goals are corrected. Simons (1995, 60) states that almost all discussion of management control systems refer to diagnostic control systems. For example budgets, as well as other planning and measurement systems, produce corrective feedback itself (type 1), in other words they are feedback systems.

Measurement systems are used typically diagnostically, but they may be used also interactively (see e.g. Vaivio 1999; Tuomela 2005). Interactive control systems (Simons 1995, 91-124), which has focus on strategic uncertainties threatening the current business strategy, is exercised also through formal information systems. However, unlike diagnostic control systems, interactive control systems are not constraining behaviour but they enable strategic renewal. Simons (1995, 92) state that when using interactive control systems managers formulate information networks inside the organization and share information with others. These systems can be used personally to

stimulate dialogue and organizational learning throughout the organization. Interactive control motivates information gathering also outside of routine channels. These kinds of informal channels are lacking from the model of control by Flamholtz (1996, 1983), which presents feedback channels functioning only in the core control system and through the measurement system. Anticipatory feedforward (type 4) would be this kind of attention directing forward-looking information needed.

A boundary system (Simons 1995, 39–58) outlines the acceptable behaviour in order to avoid risks and opportunity-seeking in organization. Limitations are given in the form of formal rules and codes of conduct. Preventive feedforward (type 2) is example of information which limits ex ante acceptable behaviour (cf. Flamholtz et al. 1985, 43).

A beliefs system (Simons 1995, 33–39) is an explicit set of organizational definitions providing core values and a direction for the organization. Managers communicate formally with symbolic use of information the values they want subordinates to adopt. In organizations, commitment to these organizational values is thought to lead behaviour towards performance which is in line with organizational goals. Evaluative feedback (type 3) would be information about how this effort is achieved and whether individuals are pursuing organizational goals (cf. Flamholtz et al. 1985, 43).

As mentioned earlier, the broad interpretation of the concept of feedback includes also feedforward loops. As the concept of feedback is complex and it has different meanings in different branches, it may be useful to regard feedforward as an own concept (cf. Nishimura 2003). Traditionally feedback has been regarded as an ex post control mechanism but in future, in line with the ideas that accounting should focus more on future than on past (cf. Johnson & Kaplan 1987), more attention to feedforward is called for. Whether it is given formally or informally makes no difference, even though formalizing these kinds of future directed processes is challenging.

Prior classifications of feedback

Corrective and evaluative feedback (Ilgen et al. 1979, Flamholtz et al. 1985, 42) was already presented above. Corrective feedback is quite close to the output feedback and evaluative to the behavior feedback by Ouchi (1979; 1977) and Ouchi & Maguire (1975). Output feedback is simply about work output and behavior feedback is about work behavior, whether specific to the work goals or general (Flamholtz et al. 1985, 42–43). In line with these, in psychology literature, three of the most extensively studied types of feedback are outcome feedback, task properties feedback and cognitive feedback (Leung & Trotman 2005, 538; see Lockett & Eggleton 1991 for review). In addition, one common typology concerning feedback is positive versus negative. With a

managerial perspective both types are regarded as evaluative information (see e.g. Ashford & Tsui 1991, 254).

In addition to the variation of feedback types, managers may receive feedback from many sources and in many ways. Some feedback comes from the formal systems, such as accounting measures, but much feedback comes from social sources such as superiors, peers, and subordinates (cf. Ashford & Tsui 1991, 253). Bruns & McKinnon (1993, 94–95) lists informal sources of information to be such as face-to-face meetings, observation, telephone calls, and informal reports.

Further, Kovar (1996) separates three types of feedback according to the focus:

- person-level, focusing on individual performance
- process-level, focusing on efficiency of whole process
- organization-level, focusing on customer's perceptions of the output.

Formal and informal feedback

The article by Ashford & Cummings (1983) was the first one to announce how on person-level informal feedback is as important, if not even more important, than formal feedback. Ashford and Cummings (1983) simplifies and differentiates the notions so that formal feedback is consisted of a formal report or meeting whereas informal feedback is communicated in daily interactions. Further, Ashford & Tsui (1991, 264) draw a parallel between informal feedback and voluntary feedback. This is the case for example when peers or senior people without any authority over the receiver give feedback. Instead, formal roles, such as supervisor, involve certain responsibility or even obligation to provide formative feedback on a regular basis, like yearly development discussions. London & Smither (2002, 88) differentiates informal feedback in a way that such feedback is provided independently of formal mechanisms. They accentuate the nature of feedback as an unplanned event, or “in the moment” feedback (cf. “unscheduled” by Katz & Kahn 1978, 449). It lacks officially defined rules and procedures of how, when and by whom feedback has to be given. Also Lockett & Eggleton (1991, 376–380) acknowledges formal and informal sources of feedback regarding management accounting and classifies internal sources to formal (management accounting systems) and superior, peers, task and self. Further, they state that the formal management accounting system provides feedback it is regarded inadequate for many reasons. One major reason is that individuals need to track also their own performances and seek actively relevant information for these purposes.

To sum up, informal feedback concerning individuals (typically between superiors and subordinates) is acknowledged and discussed in management and psychological literature in some degree. However, what constitutes informal feedback in the broader

context of organizational control or in management accounting and how it is used in that context, needs more crystallizing. The concepts of formal and informal feedback and their relations will be reviewed towards the notions of formal and informal control, which have a more established status in management accounting.

The relations between formal and informal feedback

According to the second research question, i.e. how are different forms of feedback interrelated and used in organizational control, are discussed here---

3 FORMAL AND INFORMAL CONTROL

Formalization in general and the use of rules and routines in organizations

Formalization represents the extent to which control is exercised through formal, standardised rules and procedures (see e.g. Harrison & McKinnon 2007, 100; Hall 1977, 154). The higher the proportion of job codification and the less the range of variation allowed, the more formalized the organization. Besides the degree of formalization, organizational structure defines the concentration of authority. Authority can be concentrated at the corporate level management (centralization) or it can be delegated to lower level managers in the organizational hierarchy.

As stated, formalization represents the use of rules in organization. Many researchers have treated the written system as the basis for analysis regarding formalization (xxx). However, in practice organizational rules do not necessarily have to be written. The communication of rules can be either written or verbal, only the formal status is important. Therefore, in this research formal is not a synonym for written. Formal represents officially documented rules, informal is more attached to routines (but not necessarily because informal may be also spontaneous) In addition, unwritten norms and standards, or routines, may be just as binding or even more binding as those which are codified officially in writing (Hall 1977, 154).

In management accounting literature, the institutional theory of Burns & Scapens (2000) analyzes management accounting practices with concepts of rules and routines. According to this theory, rules are the formal procedures according to which things should be done (e.g. formal management accounting systems and manuals) and routines are the accounting practices actually in use (patterns of thought and action by individuals or groups).---

Formal and informal control mechanisms

It is commonly acknowledged that formal information systems are not adequate in such (see e.g. Preston, 1986; Argyris, 1977; Hopwood 1974). Instead of the formally produced official documents, people in organizations can keep themselves and the others informed about what is going on simply by naturally occurring, informal interaction. Also the existence of informal information 'systems', like unofficial reports kept by operating managers, are acknowledged in many research projects as well as in practice (e.g. Clancy & Collins 1979, 22). In line with this, several calls for research with examine formal systems within the context of informal systems and procedures

have been given (e.g. Otley 1991; Daft & Macintosh, 1984; Flamholtz 1983) and answered (see e.g. Chenhall & Morris 1995).

The overall control of the organization can be presented as a set of different controls. Hopwood (1974, 21–38) classifies administrative, social and self controls and states: “Most large enterprises use formal rules and standard procedures to regulate the behaviour of subordinate managers and employees. Additional rules are given verbally or learned through experience.” In other words, there are both formal and informal ways of controlling. Social controls emerge from the shared values and commitments of organizational groups and self controls reflect the control of which individuals exert over their own behaviour. The latter two types of controls are probably more difficult to formalize in organizational rules and procedures because of their complex nature.

Organizational goal congruence is discussed here---

Critique for the formal accounting systems are discussed here---

Besides using formal reporting systems and procedures, managers also rely on a variety of informal control mechanisms. As shown in Figure 3, personal relationships and culture are examples of such informal control mechanisms (Marschan, Welch & Welch 1996, 139).

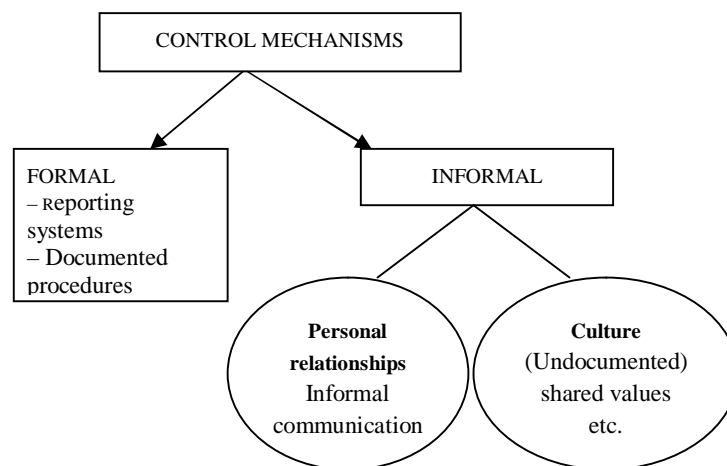


Figure 3 Formal and informal control (Marschan, Welch & Welch 1996, 139, modified)

The original figure of Marschan, Welch & Welch (1996) has been modified so that procedures in the formal mechanisms are required to be documented and shared values in the informal control mechanisms exclude official, formally documented values of the organization. Though less visible than structures, informal mechanisms are also notable means of implementing control. For example, the use of teams and personal networks

can facilitate informal exchanges of information across functional boundaries. According to Harrison & McKinnon (2007, 110-112) informal information sharing as well as fluid workgroups and teams can provide faster and more decision-relevant information than often lagged and ex post formal organizational channels---

4 FORMAL AND INFORMAL FEEDBACK IN DIVISION STEELCO

Changes in the case environment

Feedback culture

Feedback procedures

Feedback in the core control system

The interplay of formal and informal feedback

5 DISCUSSION AND CONCLUSIONS

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