

Rule Breaking in New Product Development – Crime or Necessity?

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The purpose of this study is to investigate the effect of applying general rules in organizations to govern multiple new product development projects. Data were collected in structured interviews with project managers and project members from seven successful projects within Swedish companies. Results show that projects either broke rules or that organizations had developed strategies to cope with the risk of rules preventing the progress of the projects. The project managers of the rule following projects reported lack of rule breaking to be the result of the rule design at each company, intending to minimize the risk of rules preventing the progress of projects. With the exception of the manager of the rule changing/removing project, project managers show a relaxed attitude to breaking general rules that hinder project progress. The study indicates that frameworks of common project management rules increase the risk of delay in new product development projects, unless strategies of rule breaking or dynamic rule modification are applied. Applications of emergent standard management philosophies and practices to innovation are discussed.

“Written rules are repositories of organizational lessons, but the learning that deposits new lessons into rules and remove old ones is notorious for generating myopic, path-dependent, and inefficient histories” (March, Schulz & Zhou, 2000 p2).

Introduction

The firms of our society have greatly increased their spending on Research and development since the beginning of the 1980s (Sandgren, 1996; Braunerhjelm, 1998). As one of the managerial duties is to execute strategic control of organizational resources, it is no surprise to find emergence of interest to control and manage R&D and new product development (NPD) (Ekvall, 2000). This may be performed by using any or several of the emergent standard management philosophies such as Concurrent Engineering, and ISO 9000, containing standardizing rules and regulations. As examples of application, they may impose actions of coordination and feedback, force formalization of practice and authorization of change of practice, or regulate organizational design.

Tools for the management of projects emerged around the year 1900, and gained in

popularity with the success stories of American arms race projects during the late 1950s and the early 1960s. Its stressing of rational-analytical planning turned out to be devastating when it was applied to the war theatre of Vietnam and the development of project management tools took other routes (Engwall, 1995; Adler, 1999). However, Ekvall (1993) has called attention to the fact that today's handbooks in project management still follow models that contradict accepted knowledge and models of creative problem solving. This sounds irrational, but management might be tempted to adopt practices for fashionable reasons rather than rational (Abrahamson, 1991; Huczynski, 1993; Collins, 2000).

Research has shown new product development to have several peculiarities. Among these, it is a process characterized by organizational politics, since advocates of any innovation need to negotiate and acquire a share of the organization's common resources to make room for the development of their innovation (Frost and Egri, 1991). Ekvall (2000) has shown that emergent management philosophies and practices succeeds to different extent when it comes to measures of effectiveness, quality, and NPD generation, and remarkably, that one of them (ISO 9000) corroborated negative relations to outcome

*Project
management tools*

variables. To use Ekvall's words; "as management philosophies and practices geared to efficiency and standardization work against variation, it becomes a justified attempt to analyze the experiences of people in organizations who have to balance the tension between efficiency and innovation (Ekvall, 2000 p9)". In short, how does managerial practices accord with new product development's striving for creativity, innovation and autonomy?

Abundant anecdotes tell us of defective rule design. Some anecdotes address how deviant rule-following in fact is what keeps business running. The union at the old state-owned British Rail declared a work-to-rule, whereby employees did exactly what was required by the regulations developed by the railway authorities. The result was that hardly any train left on time. Schedules went haywire, and the whole railway system quickly slowed to a snail's pace, if not a halt, because normal functioning required that the employees found shortcuts or at least streamlined procedures. The employees had discovered the power of "working to rule" and used that, rather than going on strike, to further a claim or address a grievance, a process that proved costly to employees because they forfeited their pay (Morgan, 1998).

A discussion of rules in the literature of organization studies may begin with Max Weber and the links he made between rules, bureaucratization, and modernity (Weber, 1947). Today rules represent significant parts of modern organizing technology. Sociologists have studied crime and deviant behavior in society at large and researchers of organizations have put effort to finding explanations and setting norms for rule birth, change and termination – but little interest has been paid to the 'receiving end' of rule design and maintenance. For example, what are the consequences if different rules do not coincide with each other, hence forcing persons to break either rule to comply with the other?

The aim of this study is the emerging coupling of new product development projects and the use of rules to exert managerial control. The process is at least associated with elements of creativity and with producing innovative results, which is known to be nurtured by autonomy and flexibility. Projects in general are related to uniqueness and specified objectives, while managerial control, in terms of rule making and standardization, aims at efficiency and establishing generalizable work processes to facilitate coordination. Our research questions are geared towards understanding how participants in such projects perceive the use of rules, and why rules are broken or followed.

Theoretical background

Dictionary definition. Literature, which addresses the phenomenon of rules, often lacks precise definitions. Turning to the Oxford Dictionary (1999), we get "rule; a regulation or principle governing conduct or procedure within a particular sphere", "regulation; a rule or directive made and maintained by an authority", and "principle; a rule or belief governing one's personal behavior". Webster's (1999) defines a rule as "a prescribed guide for conduct or action; ... an accepted procedure, custom, or habit; a regulation or bylaw governing procedure or controlling conduct". The disparity of these definitions indicates that the word 'rule' has an imprecise use in society at large, and we can therefore expect imprecise use of these terms during collection of data in studies such as the one at hand. Accordingly, we will summarize how researchers mainly in the field of organizational studies, have approached the concept of rules.

Objectives of rules; coordination and regulation. One researcher who has dealt with rules in organizations is Perrow, who addressed the concept of rules as follows: rules have several applications in, and effects on organizations; they protect as well as restrict; coordinate as well as block; channel effort as well as limit it; permit universalism as well as provide sanctuary for the inept; maintain stability as well as retard change; permit diversity as well as restrict it. They constitute the organizational memory and the means for change. As such, rules in themselves are neither good nor bad (Perrow, 1979).

Organizations that have become too large to be coordinated through direct supervision, usually adopt rules to standardize work. One of the oldest conceptions of rules in theories of organizations is a conception that sees rules as generated to improve the efficiency of a team, defined as a collection of individuals who share objectives. They do not face problems involving conflicts of interest, though they face problems of communication and coordination in order to maximize the achievement of their shared objectives (Mintzberg, 1979). In this conception, rules are conscious, intentional actions directed toward improving organizational performance. Specifying rules that make action reliable and consistent approaches the problems of coordination and communication. Reliability and consistency of action are necessary to assure coordination among the various parts of the organization, particularly as participants leave and are replaced by new people (Pugh, 1997).

Standardizing work

Galbraith (1973) has argued that organizational structures evolve according to how much information must be processed during the execution of a task sequence. The primary virtue of rules is that they eliminate the need for further communication among sub units or structures of the organization. Information requirements increase as diversity, interdependence and uncertainty increases. Organizations deal with increasing information loads using three coordinating mechanisms; hierarchical referral, goal setting and rules.

Mintzberg (1979) takes this reasoning further and identifies five different coordinating mechanisms for organizational work; mutual adjustment, direct supervision, standardization of work, standardization of outputs and standardization of skills. Transition occurs from mutual adjustment to direct supervision to standardization, as work becomes more complex. By this we see how rules could be adopted to achieve three different standardization purposes: (a) standardization of procedure (work method), (b) standardization of output, and (c) standardization of skill.

Mintzberg (1979) also tells us that rules consist of explicit or implicit norms, regulations, and expectations that regulate the behavior of individuals and interactions among them. Furthermore, individual and collective actions are organized by rules, and social relations are regulated by rules. Rules are designed and deployed, rules are in use, rules raise frustration, rules are questioned, rules are followed – and rules are broken. As an example of adjacent terminology, one can compare Mintzberg's definition of rules to Bass' (1990) definition of norms: shared group expectations about behavior; socially defined and enforced standards about how the world should be interpreted and how one should behave in it. Another adjacent terminology can be found in literature regarding standardization (e.g. Brunsson and Jacobsson, 2000; Tamm-Hallström, 2000), where standards are described as inter-organizational sets of product and process design rules.

Even if rules can be seen as frustrating, can become questioned and can be broken, rules would not be deployed as an organizational mechanism if they had not been effective. According to Weber, rules are a necessity for legal authority (1947). This form of authority is resting on a belief in the legality of patterns of normative rules and the right of those elevated to authority under such rules to issue commands. To Weber, one does not follow a person, but a rule. Fayol (1949) wrote that discipline, being the outcome of different varying agreements, naturally appears under the most diverse forms; obligations of obedi-

ence, application of rules can vary from one firm to another, from one group of employees to another, from one time to another. Nevertheless, Fayol (1949) was convinced that norms, rules and discipline are essential for the smooth running of business and that without discipline no enterprise could prosper.

Rules may be used for other purposes than coordination. Perrow (1979) argues that rules may protect those who are subject to them and that rules are means of preserving group autonomy and freedom. To reduce the number of rules in an organization generally means to make it more impersonal, more inflexible, and more standardized. On the other hand, Morgan (1998) has observed that rules may be used as a protection for their creator from blame in case of a serious blunder.

Perrow (1979) argues that rule-less organizations are likely to be either completely automated, or completely professionalized, turning out expensive and exotic services. Using the definitions of Mintzberg, an automated organization would have the work standardization rules built into it and a completely professionalized organization would have a standard of skills. Thus there are no rule-less organizations once they have outgrown the direct supervision phase.

General or situational rules. On the societal level, sociological theories inquire how society and the individual interact and consist of two subgroups; adherents of objectivism and adherents of subjectivism. Adherents of objectivism define deviance as a crime against mutually agreed norms. According to this perspective a common consensus of what is considered as deviance and what is considered not as deviance is present in the society. There is a list of dos and don'ts that is known by every individual. Adherents of subjectivism started to challenge the objectivism around the 1960s and looked into how other persons made the deviant into a deviant. From this point of view, deviance is not a quality of the act a person commits, but rather a consequence of the application by others of rules and sanctions to an offender (Becker, 1962). The deviant is one to whom the label has been applied; deviant behavior is behavior that people so label.

Our perception of organizations affects our design and application of rules. Sociologists have been fond of the contrasts between the official system (with a dominant logic of rule-following) and the unofficial system (some official rules can be broken) of organization because it indicates that organizations are to be perceived as organic systems rather than mechanical ones (Perrow, 1979). Morgan

Contrasting systems

follows the same reasoning when he states that we organize as we imaginize. Hence, Morgan (1998) argues for using complementary perspectives and philosophies, and that the most widespread perspective of organizations is the mechanistic perspective. This tends to produce Cartesian organizations, aiming for design, control and predictability (see also Dahlbom and Mathiassen, 1993). In order to understand the concept of rule breaking, it seems natural to apply a frame of reference other than the mechanistic one. If the mechanistic perspective had been entirely correct, there would be no rule breaking.

It is clear that actions are rarely uniquely specified by rules. Rules are generic; situations are specific. Any particular situation has a number of different interpretations and may evoke a number of different identities with different rules. Relevant rules may be overlooked, particularly if the collection of rules is large. Any particular situation may evoke several rules with quite different implications (March et al., 2000).

Rules and action; rule taking/breaking/changing. Perrow (1979) also argues that while some rules are needed in organizations, it is generally felt that most organizations have far too many rules. The good, effective rules are rarely noticed; the bad ones stand out. Complaints about excessive rules or bad rules are generally symptomatic of more deep-seated problems that cannot be solved by changing rules. Some merely reflect the fact that people make rules, and people are not generally geniuses. The problem is not rules in general, but the particular ones that need changing. So, why would they need changing, and what prevents them from being changed? Rules can be viewed as recipes for dealing with problems that have been encountered by an organization (March et al., 2000). As organizations learn how to deal with their problems, they add rules to standard operating procedures and, in effect, subtract items from the list of potential problems. Hence rules are describing how to deal with yesterday's problems, but tell nothing about how to deal with rediscovered problems of today or tomorrow.

Implicit in most contemporary discussions about rules is an elementary conception that assumes that actions are translated into histories, history is translated into rules, and rules are translated into actions. The literature on organizations suggests that rules are designed and changed as a result of several processes (March, 1981). However, since rules protect interests, and interest-holding groups

are interdependent, changing rules is difficult. Rules bundle together technological and social aspects of organizations. Rules stem from the past and seek to stabilize the present and future. The greatest problem with rules is that organizations and their environments change faster than the rules. Any bad rule could once have been good, designed for a situation that no longer exists. When things become different, an attempt to change these tough, invisible threads means that all kinds of practices, bargains, agreements, and pay-offs will tumble out of the web and must be stuffed back in again. As a result of these kinds of interdependencies, changes in organizational rules are generally incremental (Perrow, 1979).

Brunsson (1989) found organizations to be involved with two somewhat different environments, one environment caring about the rules the organization has and another environment caring about the actions taken by the organization. Elements in the former environment demand proper rules, while elements in the latter environment demand proper and effective action. Parts of organizations wishing to secure a favorable position in either environment learn to be responsive to respective demand. As the two environments normally involve somewhat different groups and are subject to different variations in attention, organizations tends to respond with written rules that satisfy one group and with actions that satisfy another group. Having actions not coincide with the written rules cause a foundation for rule breaking. Hence some actors adhering to one environment will act in accordance with rules, while those actors more keen on producing action would pay less attention to following rules.

Lack of precise definitions calls for an operational definition in our study; a *rule* is made and maintained by an authority, with the purpose of directing behavior, and without official acceptance of deviation (rule breaking). A *guideline*, on the other hand, differs from a rule in that the authority officially accepts deviation. We will also use a dichotomy of locality; a rule aimed for a specific situation is a *specific rule*, and one aimed for several situations is a *general rule*. An example of the former could be a directive regarding project budget issued by management to be applied only in one specific project, while an example of the latter is rules regulating labor working hours. We can expect rules to be communicated in *oral* form, or they can be *documented* in writing. Rule breaking, while still following what the breaker subjectively interpreted as the in-

tended purpose of the broken rule is defined as *allegorical rule breaking*. We call its dichotomical opposite *categorical rule breaking*.

Research Method

We readily concede the limitation of looking at only written rules, as many important rules in an organization are not written, and many of the rules that are written are loosely connected to actual behavior. Social norms, tacit understanding, standard practice, and rules of thumb are powerful components of a rule-based organization. There are pragmatic and theoretical reasons for our focus on written rules. An obvious pragmatic reason for a focus on written rules is that, for all practical purpose, formal written rules are the only rules that leave clear enough historical traces to be studied in any detail. A theoretical reason for a focus on written rules is that they represent significant parts of modern organizing technology.

The focus of this study is project management. If we had focused on creators of rules, we had perhaps heard different stories. The scope of rule application in this study is intra-organizational, regardless to whether the intent of the originator was to apply it as an inter- or intra-organizational standard.

The study is based on a holistic multiple case study (Yin, 1994) using interviews as the source of evidence. Based on an earlier study (Norrgrén, Ollila, Olsson and Schaller, 1997a; Norrgrén, Ollila, Olsson and Schaller, 1997b) including twenty Swedish projects, we examined the results of this study concerning projects management templates and guidelines in order to get indications of presence of frameworks and rules for new product development. Out of the twenty best practice projects we identified seven projects within five Swedish companies (see Table 1) and

gained access to all of them for carrying out additional research.

The main empirical method used in our study was semi-structured interviews with project managers and other significant persons connected to the projects. The reason for interviewing the project manager was that one could expect him/her to have the widest view of the project. We chose also to get more than one person's perspective, hence making an interview with one other person that played an important role of each project. The interviews were made with one or two interviewees from each project at the time and were always accomplished by two researchers. The interview data was analyzed in a qualitative way, by observing both the presence of general explicit and/or implicit rules as well as the presence of rule breaking. A rule was considered broken if it was not obeyed, using the respondent's definition and interpretation of the rule.

The Cases

The table below gives an overview of some of the background characteristics of the cases used in the study.

Project Muscle executed at company Alpha had a mission from the upper management to change a major part in one of the company's products. A *heavyweight project manager* (using the terminology of Clark and Wheelwright, 1992) managed the project. He had a long experience from product development projects within the company and did also possess large authority. Normally the department responsible for development of this kind of products would have handled the change works, as well as all external contacts, but they had no resources. Methods and procedures were adopted from a previous project, and

Table 1. Demographics of the studied companies

World-wide		At site		Name of project
Name of company	Number of employees	Number of employees	Number of concurrent NPD projects	
Alpha	80 000	5 000	30	Muscle, Leg
Beta	25 000	1 500	35	Heart
Gamma	100 000	4 000	100	Eye, Chest
Delta	1 000	10	2	Hand
Epsilon	1 000	100	5	Mouth

Guidelines and rules

the company *stage gate system* (terminology of Cooper and Kleinschmidt, 1993) was followed, but they did outsource the work to two external companies, which was not according to the regulations. This led to an unusual development, i.e. that a total concept was bought in from the external companies and the project had to manage the contacts themselves. The project manager admitted that this deviation from the framework was unusual but did not consider it as rule breaking, as he thought that it was a guideline rather than a rule. When asked if the project followed the framework of rules at the company, the project manager answered. "*No one follows the rules by the book, since they are not updated frequently*". The project manager thought that it was a guideline rather than a rule.

Project Leg executed at company Alpha did not have an official mission from the beginning. It was not established by the upper management, but was initiated by one of the business unit managers and was led by an inexperienced project manager, who did not possess much authority. During the first year the project did not follow the mandatory stage gate system. First when the upper management became aware of the project they had to follow the stage gate system. It started at a small scale with a minimized administration and all work was very focused. The result from this was that the product description was made by the project members together with the business unit manager instead of the product-planning department, which had a reputation for raising the ceiling too high with respect to project objectives. The project had very limited resources and all project members had to contribute to the whole picture of what was going to be the final product. The project manager thought that the framework should be considered as rules rather than guidelines

Company Alpha has a multi culture regarding obedience of rules. We can see two different behaviors in the two observed projects. One project manager regards the official stage gate framework as a guideline when another project manager regards it as a rule.

Project Eye executed at company Gamma had an assignment to develop a new product, which should be integrated into a large system. Though the project manager was inexperienced, he did not adopt the company's large framework for running a project, but did instead ask the more experienced co-workers participating in the project how they

used to handle different situations and stages in the project. The reason for not using the framework was that the framework was written many years before, when the situation and the requirements were different. If the framework had been followed in detail it would have been regarded as an obstacle.

Project Chest executed at company Gamma had an assignment to develop the hardware for a small version of an existing product within a large system. The project manager was inexperienced and the work was split between two companies within the same company group. Each company had their own framework of rules, somewhat contradictory. The Gamma company had a large framework for how to run a project, but this was quite old (a new one was under development, see project Eye). Hence the project manager tended to rely on the collective wisdom of the more experienced co-workers participating in the project.

The Gamma company had a set of values which were considered to be above all other rules in the sense that they, when fulfilled, could serve as an excuse for rule breaking. An example of this was when the project manager had to travel in a hurry and the manager responsible for attesting travels was not present. The project manager made the travel, thus saved lead-time for the project and got the travel attested afterwards.

The initiative from a development manager, with a track record of very successful projects, resulted in the development of a new framework, that would better meet contemporary requirements and be more useful for the project managers. The development manager and some project managers participated in the specification of the new framework, but did not follow the work to the end. Instead, the work was performed by a team that became separated from the daily work in any of the projects at the company. Although they had a steering group they very much lived their own life. When the new framework was introduced, four to five years later, none of the initiators recognized any of their most important ideas in the new model. Since the new framework did not fully support the way projects were executed, the project managers still had problems adapting it and were forced to do as they had done before, trust persons more experienced in the actual handling of rules.

Project Heart executed at company Beta was considered to be large, even for a company as big as Beta (see Table 1). It was also con-

sidered unusual regarding the very short time plan. The mission of the project implied that company Beta should cooperate with another company to introduce the product at the same time in different markets. The time plan for company Beta was considerably shorter than they were used to as the partner-company had already done a lot of work.

It became obvious for the project management that if the project was to be completed on time the project team could not follow every rule prescribed by the formal framework. The team also understood that they could not break any rules since all rules were formed from legal requirements. Breaking these rules could result in not receiving permission to sell the product in some countries. In order to deal with this problem, the project contacted the framework creators to see if some rules could be changed to fit their needs. The framework creators together with the project team began to rework the project's needs. A lot of the work was then outsourced to subcontractors, much more than in a normal project. This project also introduced the use of detailed time schedules as instruments of project control, another practice that was not common for company Beta. Another deviation from the norm was that the team did not take notes on a word processor and store them in an electronic database; instead they took the notes on paper and stored them in a folder. This instruction was not changed, hence was considered by the project management to be rule breaking. Actually the rule only said that notes should be taken and stored, it did not say how.

The project used the rule creators as a *rule roller* to adjust the rules so that they would fit the project's need. But not only was the project gained by that, the whole organization could benefit from the changed rules, which were more applicable to the way NPD is performed today. The project's use of the framework creators as a rule roller was seen as a very revolutionary step taken by a project within this company.

Project Hand executed at company Delta was very important for the company's survival. The company had not noticed the change in market demand for a new technology for the type of products that they delivered. According to the CEO of the company sales dropped and they lost customers because of their old technology. They realized that the company would not survive more than a couple of years if they did not adopt the new technology. The problem was that their development lead-time for new products used to be much longer than they could afford now.

At the same time the company was to be ISO9000 certified which implied a rule framework to which the company was not used. The manager for the development department, who was not any friend of general frameworks, decided to do the job himself to ensure that it would benefit the development work instead of hinder it. One example of this manager's way of working with the implementation of ISO9000 is very well explained by the following quote.

"We participated in a network for small and medium sized companies working with ISO9000. At one of these meeting we should discuss our job descriptions. The other members of the network had huge files of papers containing description, while I only had one half page of a description, and that was for all positions in the company. My description said – we only employ persons able to work without any descriptions of position – which was all right by ISO9000."

Besides ISO9000 there were no other rules to be followed, but the time frame limit set by the market. Although there were other projects being performed in parallel to the main project, these had very little priority so the organization could be considered as a single project environment. This project minimized the rule framework to increase flexibility when the circumstances required that.

Single project environment

Project Mouth executed at company Epsilon was assigned by a small company in cooperation with a multi national company and was executed together with a third quite large company. The project manager and the quality manager at company Epsilon, together with the customer designed the framework for this project. Company Epsilon had no general framework but made an individual framework for every new project. When the company was even smaller and the number of projects was limited, it was possible for one single person, acting as quality manager, to be involved in every project to guarantee the quality of the execution. When the company started to grow it became too difficult for one single person to have a personal engagement in every project.

Instead of writing a general framework to get control of all projects they divided the quality manager position into three. By doing that, none of the three quality managers had to be involved in all projects but could concentrate on a manageable number of projects, thus being able to have a personal engagement in each of them. By having

regular meetings the three quality managers could also ensure the conformity within the company.

Analysis

The result shows that among the projects some broke some of the general rules (Muscle, Eye, Leg, and Chest), changed the general rules (Heart), minimized the general rules (Hand) or had no general written rules, but project specific rules (Mouth). The reasons differ for each case.

Project Muscle managed the work themselves, instead of the development department responsible for the products. By taking the management of the development instead of waiting for the functional unit to make resources available, the project shortened the lead-time. *Project Leg* didn't wait for the upper management to authorize the project. Starting the project with no grant from the upper management resulted, according to the project manager, in an early introduction of a new kind of product. *Project Eye* had an old framework (linear model) that did not adapt to the way projects are run today (concurrent engineering). The project manager ignored the rules from the old framework, and rather trusted the senior designers at the company. *Project Chest* was executed by two different companies, and had to follow two frameworks that sometimes came in conflict with each other. By trusting in senior designers at the company and discussing with them how to combine the two cultures at the companies a lot of unnecessary work was avoided and the lead-time was kept as short as possible. For both projects at *Company Gamma* it was stated that the frameworks were to be followed, but they did not, because that

would have hindered them. The first would have been hindered because the framework did not fit the way projects are run today. The other project did not only have an old framework to follow, it also came in conflict with another framework sometimes contradictory to their own. *Project Heart* used the framework creators as a *rule roller*, to adjust the rules to fit the project needs. The project did neither follow nor broke the rules. By changing the rules the project did shorten the lead-time of the project. *Project Hand* minimized the rule framework to increase flexibility when the circumstances required that. By avoiding a lot of rules and large frameworks they never came to be hindered by any rule. *Company Epsilon (Project Mouth)* found a way to continue with a small-scale project management though they grew big and got a multi project environment. Designing project specific rules together with the customer and the quality assurance manager reduced the risk of any obsolete rule from a general framework to hinder their projects. One could say that they lived by the device small in large.

Discussion

Rules are rarely changed, rather broken. Five out of seven cases in this study either broke or bent rules. If the intention behind rules is for them to be followed, not broken, it is essential to understand why. Is it perhaps because of the attributes of new product development as such; members of projects break new ground and cannot be guided by rules designed from past experiences? In all cases where rules were broken or bent, the companies had implemented general rules (e.g. tollgate systems, documentation standards) in order to be successful in project management. In the

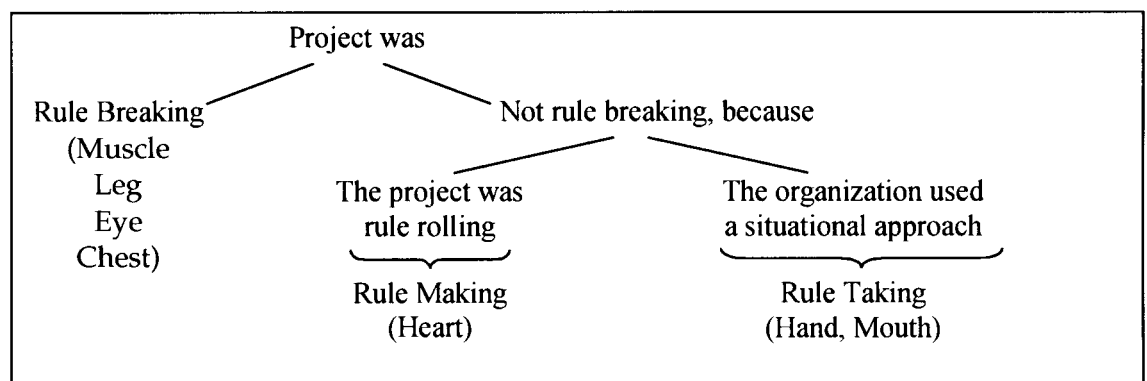


Figure 1. Rule breaking, rule making and rule taking in NPD projects

two cases where rule breaking was not found, the projects faced situated rules.

Perhaps project managers tend to regard such organizational politics as bureaucratic resistance (LaNuez and Jermier, 1994); they might resist obeying rules deployed by management functions perceived as 'alien' due to lack of project management experience. In support of this hypothesis are findings from the Gamma projects, where project managers apprehended the future version of the revised project management rule and guideline framework, which was perceived as having been designed with little involvement from experienced project managers. These project managers took pride in their engineering background and the engineering culture of their company, and engineers are known to express need for freedom in order to explore and be creative (Badawy, 1971; Kylén, 1993).

Our findings coincide with Young's in her research in UK health care (1999); managers demonstrate great versatility in accepting, subverting, reinterpreting, ignoring or hiding rules. Young suggests this behavioral versatility to be the effect of managers' wishes to be free to choose the appropriate behavior in any given situation; she labels this 'opportunistic managerialism'. Although it is a leap between health care and new product development, there is a common denominator in these studies – managers and project managers struggling for freedom from bureaucracy. In both studies, managers and project managers were reported to break general rules – in no case of this study did project managers (nor project members) admit to breaking a project specific rule. There might be several reasons for us not noticing such rule breaking; respondents might be more resistant to confessions of ignorance towards steering committees and customer representatives, but perhaps there was less rule breaking of that kind. The project managers of this study clearly showed a greater loyalty to current, specific directives from their managers and customers than to historic, general rules issued by remote, and sometimes unknown, quality assurance managers. There are such findings of loyalty in this study. Project managers of the rule breaking projects confess not to categorical rule breaking, but allegorical. While claiming that the broken rules would have impeded the execution of the project, they try to act according to the perceived intentions behind the broken rule. Project management does not necessarily mind the intentions as such, but the 'unnecessary pirouettes' required by the rules. This speaks in favor of a situational approach of rule design, where appropriate levels of

management influence and control still can be reached.

Rules might be redesigned through rule bending; project Heart at company Beta stands out in the study results. Beta acts on a heavily regulated market, where government authorities might revoke the company's right to sell specific products (or access the market at all) if the documentation of either the product itself or the process of R&D and manufacturing is found to be unsatisfactory. It is understandable that members of project Heart took care following rules, even if this meant they had to act as rule developers themselves. We found no company-specific obstacle preventing the four project managers of projects Muscle, Leg, Eye, and Chest at companies Alpha and Gamma from doing the same thing. If Alpha and Gamma one day would find their market regulated, rule bending might be the chosen strategy for their project managers. Rule bending certainly is a kind of feedback from rule follower to rule creator, a feedback that now is not brought forward in companies Alpha and Gamma (but certainly to the researchers of this study). A project manager at Gamma acknowledged the need for feedback to rule creators of the company, but excused the lack of effort through not having enough 'energy'. So, why did project Heart attempt, and succeed, in rule bending? Perrow (1979) warned that rule changing might be difficult, due to interdependency of interest-holding groups and that different rules of different age form a tough web. Project Heart managed to align the interests of the different interest-holding groups, using top management's top prioritization and great interest in its success as a motivator for cooperation. Projects lacking such a scarce but powerful motivator may be tempted to resign from attempts of rule bending.

The projects Hand and Mouth of companies Delta and Epsilon reported neither rule breaking, nor experiences of bad rules. However, at the company level actions had been taken to avoid rules from hindering the execution of NPD projects. Delta minimized the project impact of their ISO 9000 implementation. Other characteristics of Delta, its size and its small number of concurrent NPD projects, might also be of importance when finding explanations for the rule following behavior of its project manager. Epsilon minimized the set of general rules to just one – each project shall be guided by a set of project specific rules. Because of this, all rules were negotiated by project management at the initialization of each project, which might be viewed as a kind of situational rule

Rules have lives

bending. The quality assurance managers of Epsilon suggest rules for these negotiations and, in doing so, act as carriers of knowledge between NPD projects from past to future. It is interesting to notice the quality assurance tactics of Epsilon's management; they aim at hiring a proportional number of quality assurance managers to the number of concurrent new product development projects. One espoused purpose behind these tactics is to make each quality assurance manager keep a fit social network and support mutual social control between quality assurance and project management.

Perrow (1979) wrote that rules secure control for the interest owners. Common rules produce this control by standardization. Standardization often reduces variety and thereby the cost of control and would for that reason be preferred by the interest owners as a coordinating mechanism. Results of this study indicate that while the standardization characteristic of general rules transfers the cost of control from interest owners to project management, this will at times be considered an unnecessary burden. However, the rules broken in our study were to a large extent process coordinating. One rule breaking project manager claimed he would seek advice from older, experienced project members rather than trust rules and guidelines; thus (using Mintzberg's (1979) model of coordination) being in favor of coordination of skills rather than coordination of work.

Findings in our study support Brunsson's (1989) theory of two environments, one rule-caring and one action-caring, where the latter is used by project management for finding support of rule breaking. We found examples of companies where the rule creators are separated from the interest holders of the projects and where these interest holders have given informal authorization for project management to side-step the interests of rule creators. This indicates that rule creators use logic deviant from both project management and interest holders. Allegorical rule breaking in an organization where rule breaking is detected and questioned keeps the breaker alert by forcing him or her to have a good explanation for the rule breaking. One can therefore argue that rule breakers are involved in an authority race against rule creators, a race creating tension but also ingenuity and sharpness. Rule breaking thrives in organizations where rule-caring and action-caring have different owners.

Even if our study has given some answers it has given rise to even more questions. Why does it seem that frameworks of rules grow and have lives of their own? If a rule were

designed to prevent projects from competing for other projects' resources, what would happen if that rule were broken? To what extent are rule creators aware of the dialectic? What causes are behind good versus poor feedback from rule takers to rule creators? Are the controlling rules of new product development designed to give answers to yesterday's problems, and what would happen if they were designed to initiate reflection upon the problems of today and tomorrow? More research is needed within the area of standardization and regulation of new product development projects. It seems necessary to further our understanding of how rules for such projects are made and maybe, above all, how they can be changed and developed to fit the needs of non-routine work processes.

To conclude our discussion; new product development and rules are not necessarily contradictory. Although this study has identified an ongoing struggle between rulers and ruled, we have also found cases of harmony between them. We argue that these projects has to be guided by context sensitive rules, if both rule following and the serendipity of project execution are to be used as complementary forces in achieving innovation and efficiency.

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