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Looking In or Looking Out?
Top-down Change and Operational Capability

Mark Lemon, John Craig & Matthew Cook [*]

Abstract: *»Nach innen wenden oder das Aussen im Auge behalten? Top-down-Veränderungsprozesse und operative Fähigkeiten«*. Strategic intentions reflect the aspirations of an organization. They can also be translated into targets for the rest of the organization and structures, procedures, measures and associated rules introduced to meet them. Drawing upon insight from social systems theory, and case study evidence from the telecommunications industry, this conceptual paper suggests that the ensuing implementation processes can conflict with the principles and objectives of actors at operational levels and lead to behaviors that can hinder the pursuit of those high level goals. This misalignment, or pathological autopoiesis, is manifest through a restructuring in which the organization becomes the environment for operational actors who in turn focus upon the "translation" of imposed conditions into their own psychic and social needs. In effect the organization turns in on itself and away from the need to acquire information about, and respond to, its own environment, a condition that is fundamental to the resilience and survival of any system.

Keywords: rules and measures; trust; autopoiesis.

1. Introduction: From the Inside Looking In

The view of organizations as static entities, waiting to be "done to," is increasingly questioned (HODGE & CORONADO, 2007). Whether we think of them as complex, irreversible and manifesting emergent characteristics (STACEY,

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1996; CILLIERS, 1998; ALLEN, 2007), as the interaction and juxtaposition of multiple actors – human and otherwise (LAW, 1992 and 1994; LATOUR, 1993) or as the recursive interaction of form and behavior (GIDDENS, 1984; BECK, GIDDENS & LASH, 1994; SCHNEIDEWIND & PETERSON, 1998) organizations are linked and co-evolutionary processes. In consequence they also defy a management approach that is based upon a linear transformation from the articulation of strategic aims to their operationalization.

Martin GREN and Wolfgang ZIERHOFER (2003) follow LUHMANN's (1995) observation that the contemporary industrial landscape has become one of increasing differentiation and restricted or specialized functionality in which each sub-system has its own codes and protocols. This reduction of function also means that the transformation of abstract, cross cutting and high level vision into action, is seldom smooth or aligned in the way that senior management would choose. BEER and EISENSTAT (2000) suggest six key barriers or "silent killers" to the effective implementation of strategy, albeit it well conceived. These reflect the difficulty of implementing change into emergent, multi-scalar systems and include top down senior management style, conflicting priorities and poor communication and co-ordination within and between the organization's functions. This broadly conceptual paper will suggest an additional barrier, namely the tendency of some rules and procedures, often driven by inappropriate performance measures and targets, to direct an organization's attention inwards and away from its external environment. The environment, or that over which the system – organization has no direct control, includes a set of economic forces associated with an industry, associated competition and market conditions more generally.

The paper will argue that the implementation of some procedures from the top-down, albeit in pursuit of consensual high level objectives, can result in a social restructuring at operational level that mitigates against the achievement of those high level aims – in the case example outlined below these aims are operational efficiency and enhanced customer satisfaction. This systemic reproduction or autopoiesis, will be seen as the emergent relationship between the receptivity of operational actors (JEFFREY & SEATON, 2004) and their willingness and ability to acquire information about the environment in which they operate. The resulting communication deficit provides an example of what GREGORY (2006) terms pathological autopoiesis and occurs between operational actors, between customers and those actors and thereby between customers and the organization. This process of mutually (un)informative and emergent interaction, or structural coupling, highlights the distinction made by LEYDESDORFF (2000) between the transfer of information between actors and its communication to the organization. The ability of a system to respond to its external environment is key to its adaptive capability or resilience; this ability is in turn largely determined by the information about that environment and the communication of that information into the system. DEGELE (2008)

highlights the intentional aspect of control before suggesting that where there is limited information the ability to control or adapt is compromised. By extension it can be argued that where information about the external environment resides in specific social structures, and is not fed into an organization, the ability to control is correspondingly compromised. It is the paradox that results from an organizational desire to respond to external conditions through top-down control leading to the acquisition and retention of information about the environment at operational levels that forms the basis of the following discussion.

Any top management, as part of its survival strategy, has a duty to set out high level objectives and ethics within a Logically Coherent Culture (ARCHER, 1996) which is designed to encompass all aspects of the company's vision for itself. However, organizational mission statements developed by those following a planned approach to strategy are often dismissed as meaningless or disreputable (EDEN & ACKERMAN, 1998) because they appear ambiguous and fail to translate into a framework for action. They appear like proverbs for general consumption, the motherhood and apple pie of management. While the Planning School has been criticized for an overly controlling approach to strategic planning, resulting in a lack of learning, there has been an increasing acceptance of the need for strategies to emerge, or form, as well as be formulated (MINTZBERG, 1990; MINTZBERG, AHLSTRAND & LAMPEI, 1998). Emergence in this context is interpreted as the interaction of phenomena generating something that is qualitatively new and cannot be deconstructed into its constituent parts (LEMON & JEFFREY, 1998). Where the organizational culture does not recognize this characteristic as part of its planning it is unlikely to learn about the environment with which it interacts and within which it operates. Of course this has to be aligned with more structured procedures for acquiring that information, and through communication, assimilating it as the basis for both strategic adaptation and operational action (knowledge).

The need to incorporate an acceptance of emergence into a Logically Coherent Culture is particularly important among the different socio-cultural groupings that exist across and between management and operational levels (CRAIG & LEMON, 2008). Concurrently, actors from the different social groups interact and restructure both with each other and with their environment i.e. that which lies outside. This structural coupling (LEYDESDORFF, 2000) may occur between social systems within an organization, both laterally and hierarchically, but also independently between those systems and their environment (GREN & ZIERHOFER, 2003). By extension LUHMANN's definition of communication as the unity of information, message and understanding (LEYDESDORFF, 2000, 2003) would allow for potentially conflicting outcomes in which the communication within a coherent culture is transmitted and under-

stood while supporting action that is inconsistent with the high level intentions behind the message; pathological autopoiesis (GREGORY, 2006).

The purpose of this conceptual paper will be to explore how some of the insights into social systems inspired by the work of Niklas LUHMANN might contribute to an explanation of how and why consensual high level objectives can, following specific intervention strategies, result in an operational restructuring that reduces rather than enhances the resilience of that organization. Work undertaken by the authors into the attainment of environmental management systems and standards (CRAIG & LEMON, 2008), sustainable schools (LEMON, CHARNLEY & WRIGHT, 2010), product service systems (COOK, BHAMRA & LEMON, 2006) and telecommunications (LEMON & SAHOTA, 2004) provide examples of the potential for strategies, often operationalized through the pursuit of targets and associated measures, to have counterproductive outcomes. This paper will focus primarily upon how the social systems literature can help make sense of this phenomenon and will draw upon a case study from within the telecommunications sector to provide some exemplar data.

The case study context will be briefly introduced in Section 2; subsequent sections will then integrate examples from the case with theoretical discussion in support of a number of propositions. The final section of the paper will pull this discussion together in terms of both organizational resilience or adaptive capability and the potential contribution to this understanding made by LUHMANN and commentators on his work. Some additional methodological observations will be made about researching complex organizational phenomena.

2. Case Context and Methodology

As discussed above the counterproductive potential of top-down strategies, particularly when manifest through the pursuit of targets, can be observed in many contexts (e.g. education – the pursuit by schools of qualifications compromising effective learning; policing – the attainment of arrests compromising the reduction of crime and fear of crime; health – the turnover of patients compromising patient care). While the purpose of this paper is primarily to explore the potential of theory to help make sense of such processes the discussion will draw on case study research undertaken with field engineers engaged in customer service within a large UK based telecommunications company.

A number of strategic initiatives were introduced by the case study organization in the early 2000's to facilitate a more autonomous technical workforce in the field. These included the introduction of lap-top computers for job allocation, description and logistical information and the encouragement of working from home rather than out of local centers. Alongside these measures field engineers were expected to work alone rather than in pairs. The strategic ra-

tionale behind the move towards autonomy and the "effective" deployment of the field force was to provide a more responsive and better quality service to the customer. Concern was expressed among some of the organization's internal research groups, responsible for exploring customer satisfaction within the company, that these changes were having an adverse effect upon the level of service provided and were becoming a source of demotivation among the field engineers.

In order to investigate whether this was the case a mixed method approach was undertaken. This consisted of firstly, semi-structured interviews with members of the field engineering and customer service research team. These interviews, which took place over a three month visiting fellowship for the lead author, explored the changes that were being introduced, the rationale behind them, the mechanisms for their introduction and the perceived impact that they were having. Additional interviews were also carried out with field engineers and their line managers in their depot in the South East of England and while accompanying them on their rounds over several days. The purpose of the interviews was to establish how the ongoing and proposed changes were perceived by the engineers and what impact they felt they would have on the delivery of their service to customers. These perceptions were compared with the views of the customer service research team and the documented organizational rationale. A further day was spent in the call center responsible for the region eliciting how the relationships between operators, engineers and their supervisory staff had been affected by the changes.

In general terms these visits and the accompanying interviews were intended to provide an in-depth understanding about the factors constraining or facilitating effective customer service from the perspective of the technicians and their managers. The more specific interests of the research focused on how the policies had affected the social inter-action and information exchange between the field engineers, the motivation of the engineers and the changing nature of trust within, and between, organizational roles. The influence of these factors on the level of customer service, and the potential for the changes to have counterproductive outcomes, will provide a background example to the core conceptual theme of this paper. To explore how social systems thinking might help us understand why top down interventions can constrain the ability of an organization to learn about, and respond to, its external environment; a key feature of an adaptive and resilient system.

2.1 Learning at the Customer Interface: Communication and Motivation

Few operational employees would distance themselves from the sentiments in the following company statement or indeed from many of its' "values" and

principles: We put our customers first; we are professional; we respect each other; we work as one team and we are committed to continuous improvement.

The jump from such principles to operations is considerable with one being abstract and general and the other specific and contextual. The process is mediated through the setting of goals and the formulation of strategy with its associated rules and procedures. Responses to these interventions (e.g. independent rather than pair based working) are incorporated into the following text. This is intended to help explain the relevance of, and reasons for, specific operational activities and perceptions. It will also exemplify where and how they might run counter to the intentions of the strategies that were introduced to facilitate the improved effectiveness of field operations – the installation and maintenance of domestic and business based telecommunications.

Many of the rules, procedures and measures such as key performance indicators that are normally introduced to improve efficiency have a direct impact upon, and may even be targeted at, the social interaction within a workforce and thereby their ability to communicate and inform on both technical and customer satisfaction issues (IRONS, 1997). In this context LUHMANN argued that not only are systems determined by their interaction with the external environment but components of that system would have their own independent interactions with that environment (BAILEY, 2005; GREN & ZIERHOFER, 2003).

While companies frequently try to manage how information is communicated through formal mechanisms such as training and the structuring of internal social interaction (team meetings etc.) information can also be transferred through informal and self-organized social interaction. The following quotes by field engineers are indicative of the potential value of, and limitations to, the information that could be communicated through this type of formal and informal social interaction. In the former quote the transfer of explicit knowledge through informal mechanisms is recognized and might refer to technical guidance or geographical information or insight about customer characteristics. Equally of course the interaction may focus solely on conversations unrelated to work or criticism of the company and the formulation of strategies to undermine its procedures.

> We used to meet in the café more often. If one of us had difficulty with a job then one of the others, who had the necessary knowledge, would usually help. (experienced field engineer)

> Team meetings occur once a month and get two-thirds attendance. They usually contain one-way dissemination of information. (new field engineer)

With regard to the latter quote the team meetings did provide an opportunity for informal social interaction among the field engineers even if there was limited opportunity for "feeding back" experience from the field into the organization. It was noted that the engineers were the only people to have direct contact with customers, all other "communication" tended to go through call

centers. Despite skepticism about the value of such meetings, there remained some concern about the perceived decrease in importance that was attached to them by the organization as it sought to encourage more autonomous working practices. Attempts to make field engineers more independent were aligned with the intention to increase their productive effectiveness. This was related to new, time dependent, productivity measures and meant that the technicians or engineers were more mobile and not patch based. A field manager noted a similar phenomenon with regard to his own role:

> We get moved around a lot so we don't really know the technicians or the areas that we are dealing with. I nearly sent one man into a place called (...) until I was told that they regularly set fire to equipment there and it is usual to send two men. (field manager, supervisor)

As discussed above, these changes had a perceived impact upon the ability of the workforce to share information. It was also felt to affect the way individual jobs were undertaken, by reducing flexibility and ironically the necessary autonomy to be flexible. This indicates the complicated relationship between autonomy and level of control (DEGELE, 2008). Autonomy can be interpreted as working alone under well-defined rules and procedures. Alternatively it can be taken to mean the willingness and ability to modify rules and procedures as and when it is appropriate.

> We often put in higher specification equipment to help the next technician. The field manager is not happy but in the long run it will save time. (experienced field engineer).

> Home starts are good for the company because they save time but they are not good for team working. When field engineers cannot complete jobs, they lose the productivity. They are not encouraged to be good team players. (member of the customer service research team)

The issue of team working and team building is contrasted with individualistic working practices through the flexibility that can be incorporated into local teams by mixing or balancing different skills sets. This reduction in interface opportunities and the related opportunity for reflexive interaction inevitably reduces the learning and adaptive capability of local actors (LUHMANN, 1995). Indeed if, as LUHMANN proposes, society is communication and decisions rely on communication, decisions in the field will also be less adaptive and by extension constrain the organization's ability to learn (DAFT & HUBER, 1987).

Proposition 1: Rules and policies that limit the informal interaction among personnel also reduce the exchange of information that can facilitate adaptive responses.

2.2 Working as a Team – Where are the Boundaries?

The introduction of changes that restrict the levels of interaction between field engineers have been seen to affect the potential of the organization to learn about its environment. They also reduced the opportunity of the engineers to self-organize in response to specific environmental conditions. Issues arose about how the transfer of explicit and tacit knowledge (NONAKA & TAKEUCHI, 1995; LAM, 2000; LEMON & SAHOTA, 2004) affected the ability of the engineers to function as teams. By working alone, rather than in pairs the potential for mentoring inexperienced by experienced engineers was compromised, although it was reflected in more extensive formal training. This highlighted a focus on explicit rather than tacit knowledge. It also resulted in a failure to transfer information between the, often younger, newcomers with extensive technological knowledge, acquired through this training, and the more experienced engineers who only engaged with such innovations intermittently.

One aspect of a flexible, if not necessarily reflexive, team was seen as a mix of generalist and specialist skills; this raised two specific concerns. Firstly, under certain performance criteria, particularly those that are influenced by the time spent on a job, the technical specialist could be allocated the complicated tasks that are time-consuming. This can make it difficult for them to meet their targets if such tasks are not allocated separate standard times.

> The best engineers have the lowest productivity because they get the most difficult jobs – they get penalized for this and this causes resentment. (member of the customer service research team)

The focus on time, combined with the reduced interaction between engineers also meant that there were no mechanisms for the sharing of expertise associated with a particular problem in time and place. In addition the development of a generic heuristic from a range of similar problems was also constrained.

Secondly, multi-skilled personnel were often (self) perceived to be poorly rewarded, particularly when their "unrecognized by management" skills relate to defusing negative situations, supporting distressed customers or engaging with them to obtain and diffuse information.

> Multi-skilled people are not rewarded ... they should be because they are leaving to go up to non-operational positions. (field manager, supervisor)

These perceptions raise a fundamental question about the need to respond to, and meet, productivity targets that may result in the emergence of behaviors that run counter to one of the underlying corporate principles, namely the pursuit of customer satisfaction. The vision of the company operating as a team, therefore, often contrasts with the perception of some of the functional relationships or social systems that have been introduced into the customer service process. This extends into the following example where the information provided to field engineers was perceived to be inadequate.

> There is a barrier ... the front (call center) and back (field engineers) – end need to be put more directly in contact with each other. The front end is often hostile and misunderstands the requirements of the technicians in the field. There is a need for sales, control and technicians to experience other roles. (member of the customer service research team)

The rules and procedures pursued by the call center operatives often meant that the information collected from the customer was not seen to match the requirements of the field engineer. It follows that these rules and procedures, formal or informal, did not match the needs in the field nor of the company in general. This implies that the company strategy was ill-conceived or ill-implemented and call center training was inadequate.

While these statements describe an operational disparity they do not address some of the key factors that underpin the problem. For example, the resulting "inwardness" that results from productivity measures tied to a specific role rather than to addressing how that role fits within, and benefits, the overall process; ironically incorporated under the high level aim of customer satisfaction. There was also a perception among the field personnel that customers were not provided with adequate information and this often resulted in difficult situations. For example the term estimated time to repair was often interpreted by the customer as a completion time, whereas it signified the potential time of arrival. Where customers had made alternative arrangements based upon their expectation of completion, they would often be frustrated at what is perceived as a delayed start, let alone finish, to the job. This was seen by the engineers or technicians not only as a failure to inform the customer but also to understand the role of the technician and the skills required to deal with social as well as technical difficulties. Each of the previous examples suggest that the successful communication of "appropriate" information between roles operating on the same level (sales and technicians), and from the top down and bottom up, is indicative of the need to be more aware of how those roles fit in to the bigger picture (WEBB, LETTICE & LEMON, 2006; COLEY & LEMON, 2008). Indeed one of the roles claimed for matrix management (DE LAAT, 1994) is to ensure that all elements of the agency side of management from design through to field engineers can call upon all the resources within those organizational elements.

Proposition 2: It is essential that the procedures and performance measures attached to one part of a linked process do not lead to behaviors that restrict capability elsewhere. Where performance measures are used they must be in the context of the whole process – and take account of the operating environment.

The previous two sections have highlighted the need to obtain, filter and process information about the environment as the basis for adaptive behavior. What this also suggests is that the nature of the task (field engineering) is modified alongside and interactively with changing internal relationships, (among

engineers) and the nature of information that is communicated between them and with other actors in customer service provision (e.g. customers, line management, call centers). This reproduction will inevitably change the boundaries between the field engineers and their environment – i.e. other engineers may now be "outside" and thereby part of the environment. This in turn raises questions about how flexible the new structures are in terms of meeting their high level aims (efficient service, customer satisfaction) and related to that the level and type of trust that might exist in order to facilitate, or hinder, those efforts.

2.3 Trust and Flexibility

One of the features of introducing change into an organization is that it encourages people away from the familiar and in so doing may serve to disrupt habitual behaviors, positive or negative (MARECHAL, 2009). Niklas LUHMANN (2000) differentiates familiarity from trust through the introduction of risk and the possibility that the outcome of a decision may result in greater damage than benefit. This is an ironic distinction in the context of the current discussion where the outcome of a policy decision may result in behaviors and the restructuring of social relations that are not necessarily to the benefit of the organization; the pathological autopoiesis discussed by GREGORY (2006).

The reduction of social interaction between technicians inevitably affects the potential for "companion" or relationship trust (NEWELL & SWAN, 2000) that is grounded in a personal bond with an individual or social group and restricts the adaptivity that can result from such close relationships e.g. information sharing, help with difficult jobs and the limitation of bad practice: "Because he works from home we never really benefit from his knowledge on the job" (member of the customer research team).

Equally of course such trust can reinforce the emergence of behaviors and associated social systems that support poor practice or indeed behaviors that are to the disadvantage of the organization while being beneficial to certain sub-groupings within it (e.g. free-loading, stealing of materials from site). MARS (1994) suggests that this requires the existence of a stronger attachment to, or fear of, a sub culture or social system than that which exists to the organization as a whole. Such behavior can of course become institutionalized when the organization finds it easier, for social and or economic reasons, to accept such behavior than to address it. The generation and perpetuation of such "pathological" sub groups can also be sustained by the re-drawing of boundary conditions such that the organization constitutes the external environment that the group has to manage and respond to. This phenomenon may also result in behaviors that can be beneficial to the organization but not anticipated by it. One example of this is where groups of field engineers agree to put in higher specification equipment to reduce problems in the future. This relies either on the personal trust of line managers and the competence of the techni-

cian or the collective agreement among the field engineers to operate in a way that is not sanctioned by the organization.

While much of the focus on trust in an organizational context is attributed to competence, of procedures, technology and people (BURNS & FLAM, 1990; NEWELL & SWAN, 2000), LEANA and VAN BUREN (2000) argue that it binds employers and employees together as well as employees to one another and creates value by facilitating successful collective action. In an earlier paper LEANA and VEN BUREN (1999) highlight two components of this social capital as associability and trust where trust can be fragile and based on risk and reward calculations. Within this arena there is the specific trust between co-workers and a generalized trust that the company is "treating them right"; in the case study presented here the first was prevailing, although not always across operational roles (e.g. engineers and call center operatives) but the second was under severe stress affecting top management, operational agency and customer alike.

Evidence of a pervasive distrust has been the emergence of operational (field engineers) concerns relating to perceptions of competence. Competence trust in this context appears to have more to do with the perceived relevance and effectiveness of the procedures that people are expected to follow than to the skill of the individuals themselves. The engineers argued that the information collected and distributed by call centers was determined by the center's targets and not the requirements in the field. This concern was reinforced by the "rationalization" of those centers to regional hubs that could be a considerable distance from a field engineers' "patch" with the result that there was no guarantee of the necessary "local" knowledge being used to support the allocation of jobs to the engineers or information to the customer.

As discussed above, the move towards individual working practices was accompanied by a perceived reduction in the amount of training that experienced technicians received and led to concern over the acquisition and updating of core competencies, and the potential danger that customers will have a reduced level of trust in operational capability. This competence based trust (NEWELL & SWAN, 2000) is as closely related to the processes that affect the way in which skills and information are specified and acquired (e.g. training procedures relating to customer interaction) as to deficiencies in either (e.g. not possessing specific skills). The latter is perceived as a symptom rather than a cause of problems that are ultimately seen to affect customer relations.

The perceived need by some engineers/technicians to focus on customer satisfaction rather than performance productivity coincided with the perception that the customer tends to get ignored because the technician is in a hurry. Concerns over the appropriateness of information, and the "breadth" of training were seen to compound the operational constraints that were felt to result from an undue emphasis upon meeting performance targets. Indeed the ability to step outside of accepted procedures in an appropriate way would be enhanced by

relevant information and diverse skills, including the preparedness to take considered risks – e.g. to spend time with a customer who may be interested in purchasing additional services.

Confidence in the judgment that underpins such a decision highlights a mix of competence and relationship trust between the line manager and the field engineer. The competence associated with making an informed decision leading to behavior that is outside of standard procedures, and the support for that decision, relates as much to the existence of trust as a principle, that should not be abused, as it does to the ability to think and operate outside of a prescribed norm,. It is unlikely that such a decision would be taken without some confidence that no penalty would ensue or that the skills (technical or social) existed to support the subsequent activity. Where these conditions do not exist the potential damage may indeed be greater than the benefits incurred but may also relate as much to the relationship between field engineer and line manager as between customer and organization.

Proposition 3: The freedom to act outside of a rule/role boundary requires reciprocated trust.

2.4 Customer Satisfaction Versus Productivity

As outlined above, field engineers undertake the majority of face-to-face interaction with the customer and a key component of an organization's ability to respond to its operating environment is the competence and persona of its engineers to undertake this task effectively. While many of the engineers felt that this was a fundamental aspect of their role there was also a perception that the organization failed to recognize its importance. This was expressed through a lack of training about customer interface and inadequate mechanisms for feeding information from, and about, customers back into the system. Productivity measures were not perceived to account for the inter-personal environment that can affect the course of a job and the subsequent perception of the company by the customer.

> Field engineers are deemed to be sufficiently skilled if they can install a service even though they may be unable explain it to the customer. (experienced field engineer)

The willingness of many engineers to engage with the customer was seen as an expression of commitment and a motivating factor in their work. It also highlighted a key paradox in their role. Performance measures and targets are productivity driven, whereas "personal" measures often coincide with the underlying principles associated with customer satisfaction. This leads to a tension between one set of principle-based measures that are motivational and another set of productivity measures that can have a de-motivating effect if not properly designed.

The importance that is attached to social skills and customer satisfaction by some engineers is an example of where underlying principles can be seen to transcend personal boundaries (ASHFORTH, KREINER & FUGATE, 2000). In other words they are pertinent to all aspects of life, including that of being a customer. The potential for conflict and demotivation arises from a failure of an organization to value soft skills.

MIRCHANDANI (1998) discusses the problems that highly trained telecommuters experience in gaining acceptance for the "soft" domestic roles that inevitably intrude into their home working. A similar situation appeared to be in evidence with the limited recognition of "soft skills" in the customer service workplace. By focusing on the technological aspects of the field technician / engineer's role management may have been in pursuit of a less effective strategy for achieving customer satisfaction than if they had recognized the variability of that role and the skills required to undertake it.

Proposition 4: In order to respond to the uncertainties of their operating environment organizations must recognize, and nurture, the social capabilities of their technical personnel.

3. Discussion and Conclusions

This short paper has suggested that social systems theoretical approaches can help explain a phenomenon observed by each of the author's in different contexts – the potential for top down, target and measure oriented strategies to have counterproductive operational outcomes. It has been argued that while high level organizational ambitions such as improving the efficiency of local service delivery and enhanced customer satisfaction are likely to receive general support throughout an organization their translation into operations can result in behaviors that negate the very purpose for which they were introduced. One suggested reason for this is that when change is introduced from the top down, without adequate attention being paid to how it might lead to a re-structuring at lower organizational levels of social interaction, there is a danger that information about the external environment will be restricted. This may occur in part through changes in the relationships between operational personnel and in part as a result of the information that is acquired by those personnel about customer needs and experiences. Some strategic aims can therefore be devalued by a failure to recognize important organizing, and often moral, principles for the operational personnel engaged in the pursuit of customer satisfaction (IRONS, 1997). For example, one cause of this dissatisfaction for the case study field engineers was an apparent management failure to recognize the extent of the role that is played by them, in particular with regard to their social interaction with customers.

In effect, the operationalization of high level aims can lead an organization to "turn in on itself," prioritizing compliance with its own procedures and

measures and in so doing compromising the quality of the interface with its environment. Information about the environment and the assimilation of that, through communication, into the organization is, it has been argued, fundamental to the resilience and adaptive capability of that organization. It means that the organization may not be able to reflect, or respond to, the complexity of the environment within which, and with which, it is operating and interacting (ASHBY, 1958; GREGORY, 2006).

This inward focus may be linked to internal restructuring in which operational actors respond to their perception of how the organization expects them to act. A response that may of course also include the willingness and ability to circumvent those expectations in a bid to align with personal and collective intentions that are not consistent with the organization's high level ambitions and the associated rules and systems to meet them (MARS, 1994). Indeed the ability of operational staff to acquire information about the organizational environment may mean that they are better equipped to function in an adaptive and self-producing manner (LUHMANN, 2000). This may occur through the interaction between the operational social system and the organizational environment (e.g. responding to the market and customer requirements) and the potential for "pathological" autopoiesis where insight may support behaviors that benefit the operational staff concerned but not the organization as a whole. This raises an interesting question about whether the field engineers in the case study, and operational staff more generally, might re-structure in such a way that the organization becomes their environment. This extends the observations of MARS (1994) and BAILEY (2005) that sub-cultures or internal system components interact with the environment both independently and as part of the organization.

Of course, a single case study can only provide limited supporting evidence for what is essentially a theoretical argument. It is hoped, however, that in combination they will stimulate research activity in other organizational contexts where change directs attention away from acquiring and assimilating information about the environment and towards the entrenchment of internal capabilities (LEMON & SAHOTA, 2004).

In light of this special issue the paper suggests a number of methodological points for consideration. Firstly, the restructuring in response to top-down interventions results in emergent and, by implication, irreversible (DEGELE, 2008) changes. Such changes occur both in terms of the (sub)systems under study and the environment with which they are interacting. The methodology employed must be able to reflect that complexity. This highlights the value of longitudinal studies and raises questions about how we observe emergent phenomena when such an approach is not feasible – e.g. for reasons of timing or resources. It also suggests the need to access actors at each level of the system under observation and to draw upon theoretical insight to help interpret how they perceive the process(es) of change being explored (LEYDESDORFF,

2003). These actors are also observers, who are responding to transformations as they see them, and in so doing form part of that transformation (MATHUR, 2008). In this sense organizational research inevitably has a "second order" observational component to it.

A final methodological point relates to the dangers of an anthropocentric approach to organizational studies. A key feature of complex systems is the interconnectivity of agents. The need to map out the social interactions between human actors is therefore very important as is an understanding of the way they individually, collectively and dynamically observe and make sense of their situation. While that situation may be socially constructed it is not constructed only of social actors. Our methodologies have to account for the technologies, economics, natural environment etc. which on the one hand provide the "objective" component of Karl WEICK's (1976) "loose coupling" while on the other interact to constitute complex systems. There is a need to systematically develop methodological and theoretical approaches that recognize all people as "potential" actors while accepting that not all actors are people (LAW, 2004).

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