*Working Paper*

# Re-engineering unwritten rules: an ethnographic study of an intra-organizational ecology


## Abstract

We discuss a behavioural study into the departmental barriers uncovered by qualitative research in 'Medico', the UK subsidiary of a market-leading, global supplier of products and services for medical devices for whom sophisticated operations and supply chain management is paramount. An ethnographic investigation of Medico's production operations, informed by an ontologically realist, narrative ecology, perspective, revealed, and appeared to explain, socially constructed, and emergent rather than intended, inter-departmental barriers. The research revealed latent drivers for production improvement that Medico's vice-president was able to act on significantly increasing the company's key measure of operational effectiveness. The example demonstrates that 'qualitative' research can have real world impact in an advanced operational context. It also contributes to an ecological or complex adaptive systems, view of organizations and, inter alia, their supply chains.



Keywords*: unwritten rules; memes; applied ethnography; organizational ecology; silos; throughput improvement.*

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## 1 Introduction

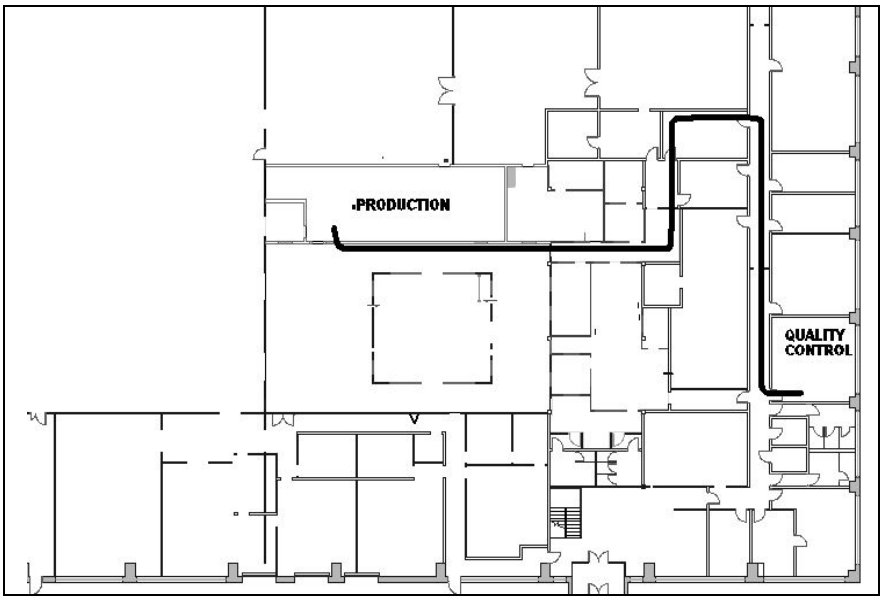
Operations Management [OM] arguably lacks ethnographic studies (Barratt et al, 2011) with an analytical research paradigm prevailing (Chase, 1980; Meredith et al, 1989; Swamidass, 1991; Gupta et al., 2006). Alternatively qualitative case study research may have been too 'relative' for a pragmatic discipline (Meredith et al, 1989; Voss et al., 2002; Donaldson, 2005). Here we describe an in-depth ethnographic case study approach, in an OM context, that resulted in managerial action and throughput improvement. We also claim the approach supports a certain theoretical stance: i.e. it is generalizable. Our context, 'Medico' supplies products and services via numerous service centres throughout the UK. It is simultaneously a high technology manufacturer and a service business. Not unexpectedly they deploy lean approaches advanced technology and engineering. Equally, given the products, quality control [QC] is critical.

On the supply side Medico is, by some margin, the largest provider in the UK. In 2008 the firm invested a substantial sum modernising their UK manufacturing facility, both in the working environment and the manufacturing processes. They deliberately sought to locate Quality Control (QC) and production closer together to improve process efficiency and reduce the physical barriers between the two teams. The before and after floor plans (Figures 1a. and 1b.) demonstrate the considerable change in the proximity of the two departments. Previously production staff had to take samples through to the QC using the path shown around 10 times a day, each journey taking 10 minutes. By relocating QC to its current location (Figure 1b.) and adding an access window to connect QC with the production process efficiency was improved substantially. However the access window did maintain a physical barrier between the two teams (an insistence of Good Manufacturing Practices

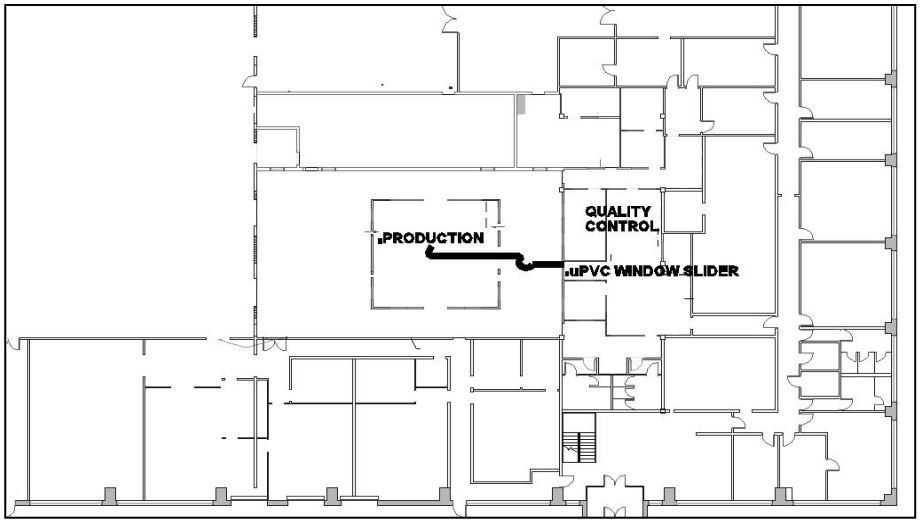
where physical separation is required between process and analysis) which could be regarded as a way for QC to oversee Production.

*Figure 1. Medico Floor Plan showing route taken by Production and Quality Control before re-location (a) and after re-location (b)*

a)




b)



Despite this re-location, the principal researcher, who at the time had responsibility for both engineering and Facilities Management (FM) within the manufacturing facility became concerned the two departments might nonetheless be generating barriers which impacted on throughput. Price et al. (2009 p.15) argue

> *A relocation or refurbishment project can be an opportunity to interrupt existing memetic equilibrium and encourage the development of a new one. All too often however, the old patterns resurface. Rather as some forests have learnt to thrive and regenerate after fires so old organization ecologies tend to resurface.*

He proposed the research described below. Medico's Vice President gave wholehearted support and was keen to use the results should they reveal scope for further improvements. The study had therefore to identify root causes and solutions to any barriers discovered. It demanded an approach that was simultaneously qualitative, investigating potential cultural issues, and yet capable of being perceived as objective within the real world setting of an advanced, high technology, manufacturing facility whose product had to meet demanding medical quality standards. In one sense the project could have been seen as academic, given that the principal researcher was working in the context of the final year of an MBA program. In another however by advocating what might be seen as ‘soft’ methods in a ‘hard’, numbers orientated environment the research was a very practical test of the applicability of ethnographic approaches in advanced operations management. The paper is written, with permission, to make that case and must necessarily be circumspect in respect of certain commercial issues.

# 2 Theoretical framework

## 2.1 Organizational ecologies

The quotation from Price et al. above derives from a paper suggesting that facilities managers should appreciate socially constructed phenomena as a reality of the organizations with which they engaged. It drew on two organizational theories. First was Becker's longstanding use of the metaphor 'organizational ecology' to explain organizations as essentially complex systems characterized by the interdependence of social and physical systems (Becker, 2007). Changes in any one aspect of the system reverberate throughout the system (p. 46).

Becker was using complex in the sense of 'complicated' rather than the more recent 'complex adaptive system' (Price 2004). A more literal ecological perspective of conceptual selection in such systems traces its roots to, especially, Hull's (1988) study of conceptual groups enabled, but also limited, by conventional wisdoms (Waddington, 1976), memes (Price, 1995; Price & Shaw, 1998) or 'modes of thought' (Weeks and Galunic, 2003.). Price (in press) and Breslin (in press) explore parallels and also contrast conceptual selection and more conventional theories of population ecology in firms. In this organizational, or narrative ecology, perspective, language or discourse shapes what is perceived as real. Reality is socially constructed and the narratives of various groups serve a function analogous to DNA in an ecosystem. Following Weeks and Galunic the organization is visualised as an ecology rather than a single 'organism' or entity.

## 2.2 Unwritten rules

Peter Scott-Morgan's unwritten rules of the game (1994) suggested that analysing ethnographic data for common motivators (values or modes of thought), enablers (people

who granted or withheld motivators) and triggers (events that did likewise) would reveal unwritten rules as routines of organizational behaviour. Those routines can be considered the means by which ‘modes of thought (sensu Weeks and Galunic op cit.) are replicated. We adopted Scott-Morgan’s methodology.

An organization’s formal rules within an organization are expressed explicitly via policies and procedures (Johnson et al 2006, p.54). Scott-Morgan argued that where individuals feel these rules are inappropriate, unwritten rules emerge to provide the user with an alternative method to comply with the organization’s expectations. In a subsequent assessment of the approach McGovern (1995) concluded that the method was flexible, in that, along with assisting change management programmes, it could also be used in appraisal form to assess the health of an organization. With that in mind there is an assumption that individuals’ perceptual realities and associated conversations also effect day to day operations through the interaction of people. McGovern even went on to question the value of written rules and policies in an organization:

> *if organizations (are) " really creatures of their own unwritten rules...should the written rules (policies and procedures, etc.) be viewed as little more than symbolic statements by self-indulging groups of managers? Why then do organizations continue to have them? "* (1997, p.56).

### 2.3 Understanding Medico

Weeks and Galunic (2003) suggest that firms can be seen as ecologies made up of populations of individuals who carry particular ‘modes of thought’ or 'memes' that "refer collectively to cultural modes of thought ideas, beliefs, assumptions, values, interpretative schema, and know-how" (p 1309) that “when they are enacted as language and behaviour and other forms of expression create the macro-level patterns of culture”. Here they suggest that

modes of thought are not replicated through the interaction of organizations per se, but in the thought processes of individuals. The formal organization, or firm, is an outcome rather than an instrument of cultural evolution (p. 1315) and 'silos' or groups are the 'species' that interact in the ecosystem[1]. Modes of thoughts are essentially social constructivist in nature (Berger and Luckmann, 1966) hence the post-modern, constructivist or linguistic trends in organizational studies can be seen, if Weeks and Galunic are correct, as an ontologically real perspective on such phenomena (Alexander and Price in press). Was this happening in the problem being studied? To find out we needed identify then understand how to manage any unwritten rules in Medico.

It is also important to understand the strict compliance required in Medico, governed by the International Organization for Standardisation (ISO). Within production ISO: 13485 is key and specifies the need for a quality management system to demonstrate the organization's ability to provide medical devices that consistently meet customer and regulatory requirements. Demonstration in turn depends on reliability and proven results via policies and procedures. Setting an operational benchmark that is repeatable is paramount to maintain accreditation, so operationally it could be considered that this creates a division of labour or departmentation (Hatch and Cunliffe, 2006, p.103). At the beginning of the research, the principal researcher thought the division would be the underlying cause of the inter-departmental barriers and wanted to uncover how this was maintained through conversations.

### 2.4 Discourse Analysis

Individuals' constructed realities are reliant on the language and associated conversations that take place. Within organizational ecology, organizations are systems of 'conversations' in the broad sense explored by Ford (1999). The 'modes of thoughts' outlined

[1] The perspective can naturally extend to supply chains as complex systems (Choi et al, 2001), and is explored by Ellison and Flowers (in press)

by Weeks and Galunic (op cit) are equivalent to Ford's socially or linguistically constructed realities (Price, in press). Ford argues that first order realities require a set of linguistic agreements, understandings and vocabulary for their existence (p.482). An individual's interpretation of reality relies on what they know or what they believe to be fact. Hence the consequence of their reaction depends on how they interpret the first order reality conversation (p. 483). Background conversations are considered by both transcribers and to an extent receivers (unless knowing otherwise) as realities (Ford et al. 2002, p.109). In simple terms there is a requirement for effective communication and that controlling communication can benefit organizational change. By effectively communicating the first order reality of a given situation, the background conversations that take place may form coalition from the workforce rather than resistance.

However, this research is also relevant to daily interaction. Ford et al (2002) suggest resistance to change relies on conversations that support three, generic, resistance giving backgrounds realities; complacency, resignation, and cynicism (ibid, p.110). All resultant conversations rely on historical examples of success and failure. The degree of change whether incremental or revolutionary (Johnson et al. 2006) is of little consequence. The result should compliment the expectation; the uncontrollable force is the human being. Discourse is the only method of controlling this variable, past ventures must be expressed accurately.

# 3 Methodology

## 3.1 Data

Ethnography can be any full or partial description of a group as a means of identifying common threads, whether these be religion, social relationships or management style (Goulding, 2005, p.299). Immersion into the social world that is being studied is instrumental to the success of ethnographic research. It has been claimed that this type of study requires an

extended research period to allow the researcher to become fully immersed in his or her surroundings (Saunders et al, 2009, p.149). However the principal researcher passed the last four years as Medico's Facilities Manager so was already au fait with the operational area. Additionally Scott-Morgan, with his pragmatic stance, argues against necessary immersion. He suggests the combination of internal and external researchers is actually preferable. In that sense the project did depart from conventional, theory-neutral, ethnography. Mainstream qualitative research has not embraced say Ford's work, or the ecological perspective outlined above (McGovern, 1997; Price and Shaw, 1998; Ellison and Owen 2010).

Fortunately authorisation for this study was not difficult to obtain. The gatekeeper (Saunders et al. 2009, p.170) was Medico's UK Vice President (VP). Once the ethicality of the study was outlined to the VP, access and authorisation was granted. Participants were advised by email of confidentiality; something repeated verbally to participants. Data was collected in the form of recorded interviews, informal discussions, and observations. Individuals selected for interviews interacted with the principal researcher as part of their role. Although Scott-Morgan's (1994) work suggests a selection of middle management gives the best results we selected a blend of individuals from senior management through to operational staff. Indeed it is worth reflecting that 'middle management' has become less common since the early 1990s. The work concentrated primarily on the production and quality departments as this was where the barriers were perceived and continued to persist despite their co-location.

The interview approach followed Scott-Morgan's advice of seeking to make the exercise one in which the interviewee could feel relaxed and be encouraged to reflect and talk freely, Price and Shaw's, (1998) 'pub conversation exercise'. Questions were designed to make the participant feel comfortable through the interview process but, more over, disclose their true feelings and display their true body language, which was also noted during the

process. Although the primary objective was to gather rich data for the purposes of understanding, the rules and problems people felt, composed part of their working day questions also alluded to the individual's motivators, enablers and triggers.

### 3.2 Coding

Scott-Morgan's (1994) suggests coding interview statements as expressions of:

- Perceived rules. "The kind of advice you would give a good friend who had joined your organization and wanted to know what he/she had to do to survive [the way we do things here]" (McGovern, 1995, p.16).
- Side effects
- What is important to individual employees within the organization; in other words, what are the personal agendas (Motivators) of various people within the organization?
- Who (Enablers) is important to the individual given these "motivators"?
- How (Triggers) does the individual impress those who are important (McGovern, 1995; Barnaby, 2007)

then asking whether the rules appear logical in relation to the motivators, enablers and triggers. For example, when one individual was asked what inspired him to work at the organization the response related to the limited external employment opportunities. However as the conversation progressed the following statement enforced a different view:

*"I feel like I am making a difference. How many other companies can you work for unless you are a doctor [or something] and save lives? The organization [in my opinion] is like an emergency service".*

The first remark is relatively conventional. The subsequent statement seems to profess an intrinsic motivating factor that is enabled via working for the organization; viz. ‘we save lives’. Furthermore the above highlights that stability is fundamental to this particular individual’s performance, a further motivating factor.

# 4 Results

## 4.1 Unwritten rules for production and quality assurance

We report here only on the observations that impacted the relationship of the production and quality departments after their co-location. The sense of making a difference and the challenge it posed appeared as a strong motivator in both. The quote above exemplifies it. Similar evidence derived from remarks such as:

> *“Yes my actions have a direct impact on the patient. The Laboratory acts as a safeguard between the production operation and the patient. This is possibly not valued by other departments who may think my job is easy. There is a lot of pressure to get things right, mistakes could have very serious implications for the patient”* [QC]

> *“There is a [form of treatment] patient at the end of what we do and people will go out of their way to ensure that the patient is not inconvenienced, because of this people won’t just close their books and go home”* [PRODUCTION]

> *“There are people who are dying and need this stuff……come on and do some overtime”* [PRODUCTION]

In one sense the motivation was positive for Medico. Despite other, normal, motivators around pay and security employees also had a sense of purpose one which incidentally aligned with their parent company’s mission statement. In another sense the

same motivator translated into a different and conflicting rule in the two departments, ‘getting it right’ and getting the necessary materials to the patient.

Opportunities for inter-departmental communication were perceived as rare and operatives had little sense of or recognition of senior management. By default their immediate line managers became the key enablers. The unwritten rule ‘impress your boss’, which is of course common (Scott-Morgan op cit.) became very focussed on immediate departmental activities. Operatives did not see themselves as part of a bigger picture.

> *“Communication between departments within what should be classed as one production environment is not [joined up].*
>
> *It's production, labs and quality. If I’m being completely honest we don’t work well together, we never have worked well and I don’t believe we will work well until certain changes in management are put in place”*

When an interviewee was asked what de-motivated him, his response was undue criticism from other departments for what he called ‘poxy’ things. He also suggested that when this was reported to his line manager nothing was done to counter this criticism. In most cases the enabling factors were management along with targets and objectives. As such the obvious triggers relate to impressing management and achieving the targets and objectives associated to individual or departmental roles. There were five key 'written' rules identified in the production and quality departments which led to five 'unwritten' rules and resulting problems in behaviour. Medico’s organizational structure is typically vertical which promotes a directive rather than embracive management style (Johnson et al. 2006, p.516). The production department perceives that it is very low in the power structure. One participant commented, in a statement that reflects a socially constructed, second order reality:

*"Production operatives are [perceived as] scum and are treated like that by the customer services, everybody throughout the building. We are the thick idiots that work the machines and nobody actually understands the importance of what those people out there do".*

The root cause of this feeling may lie in the original leadership of the company having a clinical focus which bestowed greater prestige on those in similar roles. In recent years, leadership has moved towards those with backgrounds in engineering and medical devices which has brought about a greater focus on efficiencies and processes. Regardless of the perceived power struggles between the two departments, in times of crisis the 'patient comes first' rule was strong and manifest for operational staff in both production and quality assurance staff. One participant commented, *"Imagine if any other department (referring to customer services, finance etc) were asked to work twelve hour shifts over a twenty four hour period at the drop of a hat".* Unfortunately perhaps it took times of crisis to generate such proactive responses.

### 4.2 Communication

Many comments related to the problems with communication in Medico, between departments and across the management hierarchy. There was no clear focused strategy being led at a senior level, suggesting that the organization's first order reality had not been defined. First order realities require a set of linguistic agreements, understandings, and vocabulary for their existence (Ford, 1999, p.482). Ford goes on to discuss how second order realities create an alternative reality when personal (mis)understandings are applied. Most participants implied that, although communication issues exist the tools were available to improve this inefficiency. A result of not utilising the correct communication networks could result in negative background conversations.

During the data collection stages numerous assertions were made in relation to Medico's vision statement, suggesting that it enforced how people should act and what culture should be preserved. However, as one individual commented "we can all stick pieces of paper and instructions on the wall, this doesn't mean they will be followed". The senior manager directly responsible for the QMS explained that there were areas of incompatibility between corporate procedures and the quality standard, as the latter was introduced after the former had been adopted. With no clear direction from the senior manager, production and quality staff are tentative about how to use the quality procedures.

The QMS here becomes a system for managing documents rather than one for assessing the process. In fact it becomes a meme that generates opposing second order realities between production and quality assurance through individualised performance indicators and promotes a culture of consistency that is required for maintaining ISO accreditation. Because the system was misunderstood and used inappropriately, it generated conflict between the departmental teams that made use of it. This conflict was evident at all operational levels including management and staff, and was primarily due to management requirement (the departmental objectives).

The analysis again highlights departmental barriers as a reoccurring unwanted side effect. As such teamwork has to be questioned when being considered an intrinsic motivator. We are not suggesting that the workforce do not perceive teamwork as a motivator, rather that the enabling factors promote the opposite under isolated conditions. It has already been illustrated that targets and objectives are departmentally biased and governed by second order realties (Ford and Ford, 1995). If the triggers were adjusted to promote interdepartmental teamwork perhaps further unwanted side affects would be eliminated.

## 5 Actions

The prime aim of applying the unwritten rules analysis to this organization was to address a number of problematic business issues, including a declining profit margin and evidence of barriers re-emerging despite the breaking down of physical barriers between the production and quality assurance departments. The departmental barriers were found to be the predominant unwanted side effect promoted by the unwritten rules. They resulted in unnecessary cost and rework in a complicated production environment. Disseminating the research findings to the Medico's senior management provided critical insights into the existence and cause of the departmental barriers. Conflicting 'modes of thought', constructs or memes were evidenced in the production and quality departments, despite being elements of the same ecology (Weeks and Galunic, 2001).

Medico's VP was most interested in understanding approaches to deconstruct these departmental barriers in order to maximise business effectiveness. The memetic analysis provided such insights. This approach is supported by Scott-Morgan (1994) who argues that once the MET have been evaluated it is the evaluator's job to determine how these factors can be enhanced or changed to remove operational barriers. For this secondary analysis of organizational change, the MET structure used for the unwritten rules analysis, can be used to identify solutions (Triggers).

The managerial structure was reconfigured. Both the QA and Production Manager now report to the same Manager; a new role that reports directly to the VP. Previously QA was under the Medical Director (who was a Board level director) and Production was the responsibility of the Manufacturing Manager (who was not at Board Level). The new Manager’s role and its direct reporting line, now demonstrates the importance of both production and quality to the wider organization. The reconfiguration of the reporting lines

for the production and quality departments now means that one individual is responsible for achieving both volume and quality targets so there is now much less evidence of a conflict between the departments. Because quality assurance now plays an equal role to production volume in the organizational structure, the overarching Manager also promotes a culture of transparency amongst his team. He has made transparency of change a clear first order reality amongst his staff, so that when problems arise there is interest in understanding the root cause to avoid future problems, as opposed to previous blame culture.

As a result of the research, suggestions were also made to the VP for the introduction of interdisciplinary project teams in order to trigger the communication meme. Process Improvement Groups have been set up to meet once a month to share issues and solutions. They consist of two representatives from the procurement team, two from the production team and two from the quality team and enable members to understand the impact of their work to the wider organization.

A small change that also helps to address the communication meme in the production department is the provision of a PC for staff to access the intranet and the creation of their own departmental email address. This had not previously been provided to this team, but its provision now allows them to keep updated with organizational communication, contribute their thoughts via email and portrays the message of inclusivity of their department.

A monthly team meeting was introduced. It involves both production and quality staff where the impact of their work is discussed, as is the position of the business in the wider market. Teambuilding exercises have also been introduced and are used at regular intervals, and some team based decision making processes have been introduced which ultimately saves time and reinforces the importance of the team.

Medico now also places greater emphasis on communicating to staff who the members of the Board of Directors are. To some extent this was influenced by the physical presence of the Board members on the 'shop floor'. Staff were clear that the Vice President was on the Board of Directors, and although his physical presence was rare, this was preferred and the rarity made it inspirational. There was negativity however towards the levels of interaction applied by the remainder of the Board of Directors. With the improvement in the channels of communication available for staff now at Medico there is greater opportunity for interaction with senior management.

Unclear first and second order realities also arose from the QMS, as it was no longer providing the direction for the process but rather the documentation that governed it. Second order realities were competing between production volume and quality. The organization now places greater emphasis on the Operational Equipment Effectiveness (OEE) which takes three objective complementary measures of the production operation and complements the requirements of the ISO accreditation. The measure has increased from 69% effectiveness to 89% effectiveness in the last year, as production and quality assurance operatives embrace the culture of transparency that has been introduced by the Plant Manager and report any errors or issues. With this measure, errors are attributed to the plant equipment rather than the people that operate them, so transparency does not assassinate individuals.

## 6. Conclusions

Scott-Morgan's (1994) framework proved a tool that was able to reveal, and explain, organizational dynamics within Medico in a manner that resulted in management action and improvements in organizational effectiveness. In that sense the research supports the validity of the framework and demonstrates its application in an operations environment. Equally, and contra the original suggestion, the case was not a matter of the rules for middle management

obstructing change. In today's arena of empowerment and resource cost efficiency staff opinion appears more complimentary to the study than middle management only. In that sense the case reported extends the validity of the analytical approach adopted.

The research revealed inefficiencies in various areas, the most prominent factors being communication and interaction. Mixed and unclear first order realities (Ford, 1999) resulted in multiple second order instructions. Conflicting enablers were ultimately responsible for this imbalance and management time and resources were being wasted resolving issues that could have been avoided. The evidence suggests that this imbalance would not be difficult to overcome if addressed strategically, however this was also an area where the organization were inefficient. The departmental barriers existing at the organization had a clear impact operationally. Although the organizational structure in place suited its purpose, direction was disjointed.

By complementing the MET analysis of the unwritten rules with a memetic analysis of the departmental barriers to understand the organizational ecology fully, the research was able to provide practical recommendations to the organization. The MET structure that was used to identify the unwritten rule was then used to identify solutions (Triggers). The analysis showed that the memes, or 'modes of thought', supporting the barriers between the quality and production departments were complex. Lack of communication and interaction allowed different constructs and routines to take hold in the different departments; a practical demonstration of an intra-organizational ecology impacting performance. The research suggests that routines (the rules) might reflect an underlying ecology of social constructs within an organization.

The impact of the research on practice was clear through the Vice President's acceptance of the results and recommendations. As well as a promotion for the principal

researcher to cover Production as well as Engineering & Facilities, the findings were used as the start point of a calculated change initiative. The research has brought about considerable change in the organizational structure, lines of communication and the development of a culture of transparency. The researchers intend, at the agreement of the Vice President, to repeat the learning experience after another year, to understand how the organizational ecology has evolved.

Using an ethnographic case study approach for investigating operations management is an underrated methodology. Much greater emphasis is placed on quantitative methods and the use of analytical research paradigms in operations management (Chase, 1980; Meredith et al, 1989; Swamidass, 1991; Gupta et al., 2006). However, the ethnographic case study approach used was fundamental to gathering the empirically rich content necessary to understand the organizational ecology and uncover the unwritten rules of the organization. The knowledge, experience and awareness gained from adopting this approach was also invaluable in identifying the memetic structure that could be 're-engineered' so as to initiate the required organizational change. We use the engineering metaphor with a caution because, fundamentally, the solutions changed the triggers (sensu Scott-Morgan ibid) rather than the underlying motivators.

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