

Chapter 1

Introduction

1.1 Background

Psychology is complex, so how do you address most of the people's needs for information during a process or continuous change? It will be labour intensive to do a full survey on all aspects of change, including all individuals – especially when we consider our only paradoxical constant: change.

There is mainly a threefold focus in organisational psychology and organisational development, namely the individual, team and organisation. It is difficult to work with micro models like depth psychology and macro models simultaneously due to theoretical underpinnings. How do you use deduction, from the individual to the organisation? It is easier to work inductively, but the starting point will be the Platonic “truth” which we strive for, while cannot know it. Consider a practical example: there are changes in the organisation and you use change agents to communicate the changes. What will the contents of the message be? It is an organisational drive (macro level) and the changes have an impact even on the individual (micro level).

Guidelines for a study in the field of change are given by Van de Ven who suggests that a good, robust theory of change in social structures should satisfy four basic requirements (Stickland, 1998: 62):

- It should explain how change, behaviour and structure are interconnected at both macro and micro levels of analysis;
- It should describe how change is a function of internal and external factors;
- It should account for both change and stability; and
- The theory should incorporate time as the “key historical metric”.

It seems to be a mammoth task to incorporate the points mentioned above into a research topic, but the researcher found an exciting theoretical framework that makes it possible to incorporate all the points to formulate a robust theory of change that will become evident through this research.

The company where the researcher is based, is using instruments that determines people's complexity of natural cognitive functioning, to manage talent. Understanding levels of complexity for various changes can differ in context of the change as well as in context of the individual's ability to cope with the complexity itself.

The fact that there are measuring instruments for people's ability to work within complexities, as well as the need for targeted communication and distribution of information, provides the ideal situation where a once-off measurement can contribute to targeted communication. We can be nearer to the use of a stable model applied at the micro level, translating and aligning needs that arise from changes at a macro level. Olson and Eoyang (2001: xxxiii) stated that the most powerful processes of change occur at the micro level as suggested by complexity theory, rather than the macro "strategic" level of the organisation system. Complexity theory suggests that the most powerful process of change occurs at the micro level. It is clear from this that the inductive approach from qualitative studies is useful in forming conceptual definitions from observations (Neuman, 2003: 176).

1.2 Theoretical Basis

The researcher studied a recent bibliography on stratified systems theory (Craddock, 2004, 16). Craddock's bibliography of about 3500 entries on the theory, including 300 peer-reviewed articles and sixty-four Ph.D. dissertations, clearly indicates that there is enough supporting research for validation of stratified systems theory, which is associated with cognitive complexity. Extensive research has been conducted in various areas regarding

organisational change. The basis of our current theories of change can be traced back to pre-Socratic philosophers, about 3000 years ago. Pages of definitions can be provided for communication, a recent count amounted to at least 150 definitions (Steinberg, 1997: 12). There is evidently a vast spectrum of writings on various elements which are related to the topic of investigation.

Using stratified systems theory for communication and information distribution during change did not feature in searches of literature studies on the topic.

1.3 Statement of the Research Problem

A practical way is needed for distributing information during a change process, and that must have an impact on an individual level. The focus is on usable information, which will help the individual cope with change and its uncertainties. Further observations on the research problem and reasons for the research are given in Addendum A.

A rising need is to know how to customise communication to broad groups of employees with different needs, using a simplistic, understandable framework, that can be implemented. Building blocks are needed to construct such a framework. Stratified systems theory (SST) allows development of key differentials, which are variations in building blocks of communication. The problem is to identify unique information needs, linked to cognitive complexity (SST).

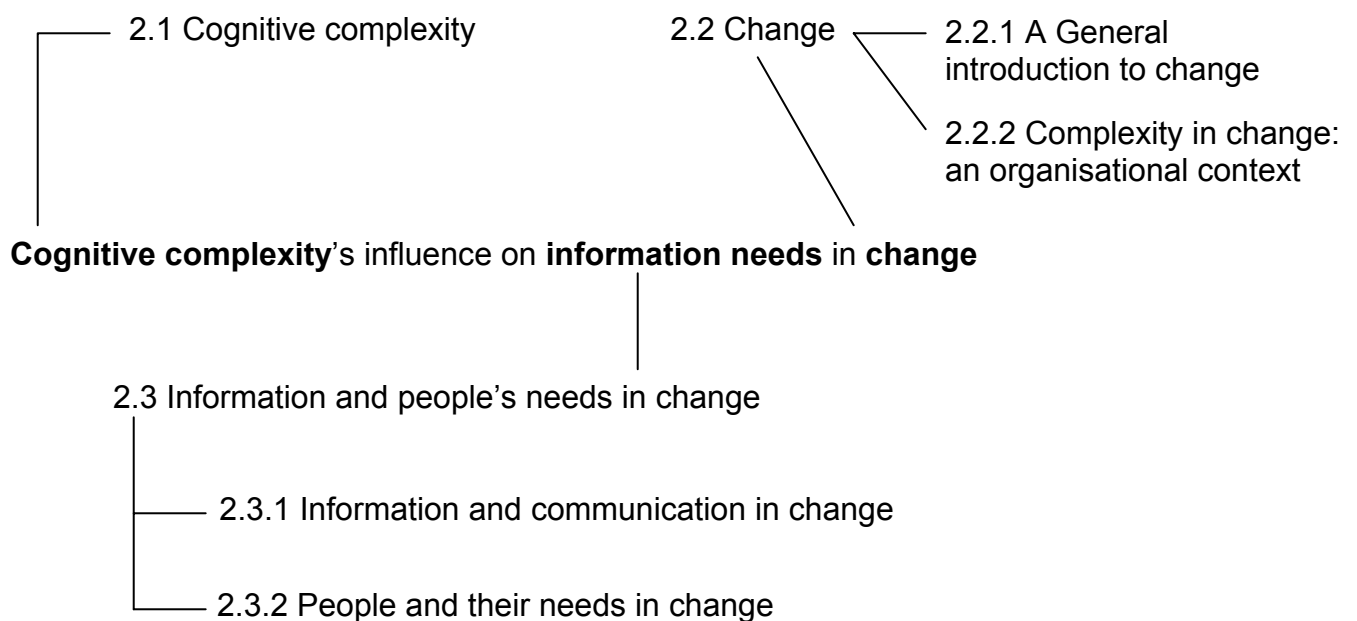
The purpose of this research is consequently to find building blocks to describe cognitive complexity's influence on information needs in change.

Chapter 2

Literature Study

Figure 2.1 serves as a map to navigate through the literature study. Theory related to the topic of research, namely: cognitive complexity's influence on information needs in change, is included in this chapter. Literature ranges from a detailed description of concepts, to descriptions of interrelationships of a concept under discussion to various topics which are related to aspects in the research topic. The first theoretical concept of cognitive complexity is generally experienced as technically difficult reading, due to its integrative nature. Literature on change is abundant. The section on change includes general theories of change, comprised of popular theories, as well as less well known theories. Information and people's needs during change are the contents of the final part of the research question which are explored. Communication, which is a major element of flow of information to people, is elaborated on in the information needs section. Elements of change, as well as information need, are interwoven in all sections of the literature study, illustrating various interrelationships of the concepts of the research topic.

Figure 2.1: Outline of the Literature Study



2.1 Cognitive Complexity

This section explores cognitive complexity from its theoretical development, including requisite theory definitions and levels of capability, to application of the theory in managerial leadership and communication.

The term cognition can be traced to its origin from the Latin for: to know or to think. Cognition refers to the process by which the mind acquires, represents and uses knowledge, encompassing sensation, perception, reasoning, learning, language comprehension and production, problem solving and memory (Rohmann, 2002: 67). Cognitive complexity is described in this section from developments based on the requisite organisation framework of Elliot Jaques.

2.1.1 Development of the theory

A discussion on Elliot Jaques' Stratified Systems Theory (SST) is necessary to understand the theoretical background of cognitive complexity. Jaques has always been preoccupied with measurement in the social sciences which he considered lagging far behind physical sciences (Bioss SA, 2002: 1-2). Gillian Stamp started working with Jaques as a research assistant with the aim to devise a procedure to measure capability.

Gillian Stamp worked at the Brunel Institute of Organisation and Social Studies (BIOSS) where Jaques worked under the Tavistock Institute for Human Resources at Brunel University (Bioss SA, 2002: 1-4). Major influences in the development of a capability tool came from Jaques' work at Glacier Metals. Gillian Stamp embarked on the development of an approach to the assessment of discretion in action by the mid 1970's (Mauer, 2000: 1). The outcome is a procedure called Career Path Appreciation (CPA).

Jaques has given his theory several names through its development. From a UK point of view where he started his research, it was known as time-span of

discretion (TSD), equitable payment, levels-of-work (LoW), and the Glacier project. The theory was later internationally known as stratified systems theory (SST) and requisite organisation (RO). Jaques' approach has been developed into a comprehensive theory of organisation, included in it is cognitive complexity, task complexity, aggregation of information in accounting and information technology, as well as organisation transformation. Craddock's bibliography of over 3500 entries on the theory, including 300 peer-reviewed articles and sixty-four Ph.D. dissertations, clearly answers objections that there is little supporting research for validation of the theory (Craddock, 2004: 4-5 & 16).

Developments on SST have indicated that work is not easily definable in strata. From this we have the Matrix of Work. The Brunel Institute for Organisational and Social Studies (BIOSS) and Gillian Stamp's contribution to measurement of cognitive complexity gives us an indication how to measure capability in complexity (Ashton, 2000: 4-6). It is evident that RO theory challenges the soft-hard antinomy. Requisite organisation theory is about having the rigor of natural sciences while preserving the human meaning of the social sciences (Solaas, 2003: 5).

2.1.1.1 Elliott Jaques' contribution

Elliott Jaques (1917-2003) consulted and conducted research on his organisation theory and its ramifications for over fifty years. Over twenty books and eighty articles were written by him. The basis of his theory was developed together with Wilfred Brown, while conducting research at the Glacier Metal Company Ltd. in London from 1948 to 1965 (Craddock, 2004: 4). Putting social sciences on a proper scientific route was one of Jaques' wishes, which was grounded by his schooling and experience in medicine, psychiatry and psychoanalysis (Stamp, 2000b: 1). Jaques' work and worldview is ordered around one prominent concept: time-span of discretion. The word discretion in this context means judgement within prescribed task limits toward attainment of a goal, where every job always has discretion (Craddock, 2002a: 8-9).

2.1.2 Requisite Theory Definitions

Time-horizon (potential capability based upon information processing complexity) is seen by Jaques as one of four qualities required for success in an employment role. The other qualities are skilled knowledge, commitment and required behaviour (Jaques, 2002: 82). This section's aim is to describe core definitions of RO theory as it might not be well known due to the isolation of this theory from the main dialogue on management and organisations (Craddock, 2004: 6).

2.1.2.1 Current Actual Capability (CAC)

The ability of a person to do a particular kind of work at a given level depends on:

- Cognitive power (CP): that is cognitive-complexity, or the innate mental ability to organise information;
- Values (V): meaning interest and priorities;
- Skilled use of relevant knowledge (K/S);
- Wisdom about people and things (Wi); and
- The absence of serious personality defects (-T).

The concept is expressed in the following formula: $CAC = f CP. V. K/S. Wi. (-T)$ (Jaques & Clement, 1994:45-46)

Jaques (1970: 119) describes knowledge as an essential factor in work, by being one of the tools. The (-T) was replaced in Jaques' most recent formulation with (RB), meaning required behaviours, defined as the ability to carry out the behaviours required by the basic established values of society (Solaas, 2003: 17). Cognitive power, from the given formula, is evidently the focus in this section of the literature study.

2.1.2.2 Current Potential Capability

Current potential capability is the maximum level at which a person could currently work, provided that optimum opportunities and conditions are there, even though the person did not have past opportunities to acquire necessary

skilled knowledge (Jaques & Clement, 1994:46). Potential working capability is a function of cognitive power (Jaques, 1992: 33). This is also referred to as effective level of work, and it is situational specific (Bioss, 2000: 58).

2.1.2.3 Future Potential Capability

Maturation of cognitive power leading to a maximum level at which a person will be capable to work in the future (Jaques & Clement, 1994:46).

2.1.2.4 Cognitive Processes

This is the mental process that enables individuals to deal with information complexity, which makes it available for doing work (Jaques & Clement, 1994:48). Information is played with, analysed, put together, reorganised, judged and reasoned with, as to make conclusions, plans and decisions to take action (Jaques, 1992: 33).

2.1.2.5 Cognitive Power

There is a maximum level of complexity that any person can cope with at any point in his or her development. This depends on the potential strength of cognitive processes in a person (Jaques & Clement, 1994:49).

2.1.2.6 Cognitive Complexity

Jaques states that cognitive complexity is expressed in the number and range of variables that individuals use in constructing their worlds. It is the expression of cognitive power and is measurable in time units (Bioss, 2000: 81).

2.1.2.7 Time-horizon

Humans are permanently engaged in goal-directed behaviour, implying the construction of a future (Solaas, 2003: 5). There is a maximum period into the future within which a person is capable of organising and carrying through given tasks or projects to reach the eventual goal (Jaques & Clement, 1994:50). The maximum target completion time of tasks in a role gives a direct measure of the

level of work (LoW) of the role (Jaques, 1992: 16-17). The time-span of a role was found by accident in 1953, but was since confirmed in 15 different countries over a period of 35 years. Jaques refers to the measure of the level of work as the time span of discretion of work. The measure of the level of capability of individuals is done in terms of the maximum time spans they can achieve within the time frame of the individual (Bioss, 2000: 56).

Stamp (2002: 63) explains that all tasks have both a “what” to be accomplished and a “by when”. The “what” is the particular output/goal/objective that needs to be achieved. The “by when”, is the longest maximum-target-completion-time (MTCT) set by a manager for a particular outcome. A direct measure of the level of work of a role is provided by the task with the longest MTCT within a role. Jaques describes that a time-span could be calculated for a job by analysing the decisions that had to be taken. The maximum length of time for which a person will commit company resources through his own initiative was discovered by this. Jaques points to the possibility that the period of time a person can look back and perceive in an organised way a continuous sequence of events leading up to circumstances in his current work situation, may also indicate a person's time-span (Jaques, 1972: 23).

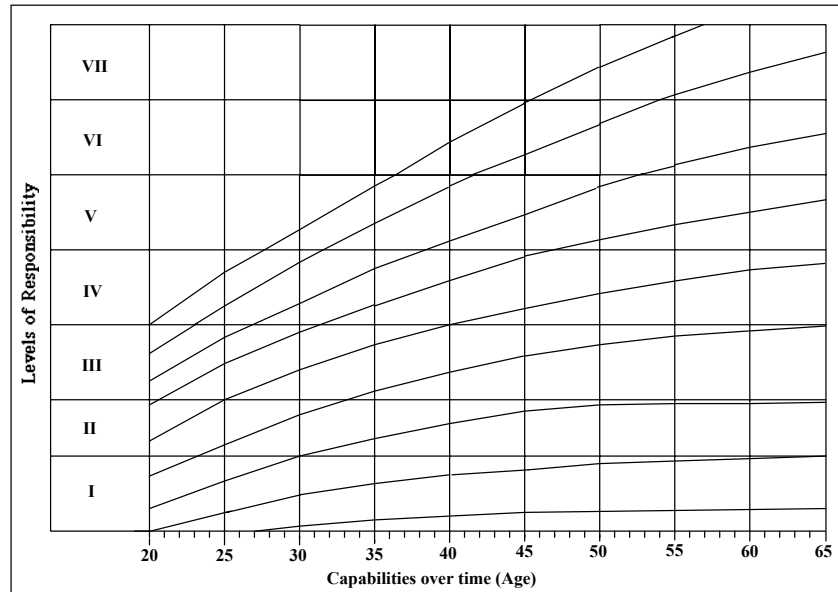
A time system of key propositions was discussed by Jaques (Craddock, 2004) in the Dynamic Time Conference. Time is seen firstly as two-dimensional in a 5-D world, consisting of three spatial and two temporal dimensions. The two time dimensions are chronos, which is ordinary clock time for measuring how long any event actually took and kairos, the time of how long something is intended or planned to occur. Secondly, time is neither uni-directional nor bi-directional, it is events that are directional. Past, present and future exist only in present human experience according to St. Augustine. Actual life of all living organisms is lived along the kairos time dimension. Solaas (2003: 5-6) explains that the measurement of the time of intention is an equal-ratio-length measurement, characterised by starting from absolute zero. Time-span is factual and its

measurement is objective, but is subjective in the sense that it depends on managerial decisions, which are changing and uncertain. The time of intention is the actual framework, making the uncertainties measurable.

Level of work is measured in terms of the maximum, targeted completion time of the goals that a person is committed to achieve (Bioss, 2000: 56). The time for which a person is expected to exercise discretion on his own account, in Jacques' Glacier Project, was found to be related to level of work or the sense of responsibility in a role (Jacques, 1986: 108 & 111). Jacques links the description of work as a person's discretion to transform the world with a predetermined goal, to the definition of the future which is a particular psychological state in the present. Work capacity is then the ability to pattern and order experience in both space and time or in a space-time continuum (Jacques, 1986: 99 & 121-123).

Stratified systems theory uses a temporal scale to measure cognitive power. Jaques states that it was observed that human cognitive functions are discontinuous or multimodal, rather than distributed on a continuum, thus of a unimodal nature. Stages of cognitive development are associated with maturation to particular levels of cognitive power. The different maturation bands, as indicated in Figure 2.1.1, are associated with different cognitive modes, meaning a different cognitive growth rate and a different achievable level of cognitive power (Bioss, 2000: 55).

Figure 2.1.1: An Array of Flow Paths – Growth Curves as described by Jaques (Bioss, 2000: 17)



Individuals will express their current matured time frame in their work, but will simultaneously show evidence of comprehending their potential cognitive mode and temporal horizon (Bioss, 2000: 76). Jaques states that it is an unpopular idea, but nonetheless true, that people mature along innately established, predictable pathways in potential capability (time-horizon). This finding has been derived from thousands of measurements of individual's progressions in time-horizon over 20 to 30 years of career tracking. People's perception of the same problem or activity will be different according to the differences in their level of abstraction (Jaques, 1986: 139).

2.1.3 The Four Cognitive Processes

The ability to continuously maintain the ability to work through anxiety, caused by exercising discretion with its uncertainties, demands that the requisite and symbolic contents of the mental process involved in work must pre-dominate over the concrete processes (Jaques, 1970: 98). Mental processes, that form

the basis of cognitive functioning in work with uncertainties, are described in this section.

It was discovered that there are only four ways in which people organise information when engrossed in problem solving (Jaques, 2002: 86-89, Bioss, 200: 66 Jaques & Clement, 1994: 52-53 & Jaques, 1992: 32 & 42-43). These ways are referred to as states or types of cognitive processes. There are also only four types of task complexity, which recur as a quartet in a series of world orders of increasing complexity. It is evident that the patterns of complexity of the mental mechanisms are isomorphic with the patterns of task complexity in the world. The following are the four types of cognitive process:

1. Declarative: secondary sets referring to shaping. It is also referred to as assertive processing. Reasoning takes place by one or more unconnected arguments. Information is used from direct associations and assertions relevant to the immediate situation. Detailed information is generalised into sub-sets, which are used as items of information, which can be further categorised and used for decision-making.
2. Cumulative: discrete primary sets referring to reflective articulation. Reasoning takes place by two or more linked arguments. Information is organised in relation to each other as to be able to combine them into a conclusion or decision.
3. Serial: chains of primary sets, meaning linear extrapolation. Reasoning takes place by chains of two or more cause and effect sequences. Information is put together in a linear form in some logical sequence as a cause and effect series of events connected through time, leading to envisage consequences, and possibly predicted future courses of events.
4. Parallel: partial secondary sets, meaning alternative systems. Reasoning by two or more series of cause and effect sequences that are linked and interwoven. Information is dealt with in each of the serial processes in parallel with each other, showing how the processes impact upon each

other. Concentration is focused on categories of exceptional or critical data.

2.1.4 Orders of Information Complexity

The methods of processing information increase in a step-wise series of complexity of the information itself. This step-wise series of complexity recur after childhood at an adult level, and the cycle recurs again (third order) in some adults at an abstract/conceptual level. A fourth order recurrence takes place among a very few people. Knowledge is consequently limited to the amount of data available, which can be made sense of by an individual. The four orders of information complexity are (Jaques & Clement, 1994:53-57, Bioss, 2000: 69-70 & Jaques, 1992: 44):

- A. First order complexity: concrete things in the childhood world of dependency. This is the immediately tangible world of childhood. Language is used to point at specific things.
- B. Second order complexity: first level abstraction of verbal, symbolic variables in the ordinary world of open categories of things and people. We observe this in the ordinary everyday world of adulthood. Verbal terms are used without having to point to specific concrete things. Variables are chunked together into useful categories to see the wood from the trees.
- C. Third order complexity: second level of abstraction of concepts in the corporate world or the world where people and things exist as patterns of complex systems and general theories. Conceptual work takes place in the whole wide world environment. Concepts are structured by symbolic language so that there is not a direct link between concepts and concrete things. A person must be able to illustrate third order thoughts and words in terms of first order pointable examples via intermediate second order concepts.
- D. Fourth order complexity: third level of abstraction of universals in the world of societies with everything else as subsets within societies. This is

formed by chunking concepts into universal ideas and language that are required for handling the problems of whole societies, social movements, ideologies and philosophies. This is thought of in terms of genius, creating new types of society, new systems of ethics and morality, new values and cultures and sweeping theories.

Transition points occur where a person articulates ideas in secondary sets at one order, and sense solutions and arrive at decisions at the next higher order.

The difference between solid language and ideas, and hollow language and ideas should be recognised (Jaques & Clement, 1994:66) in the extent to which the language and ideas are grounded and exemplified in a person's own practical experience. There is an interaction between two areas of the brain. Verbally formulated, therefore conscious information and analytical tools are contained in the predominantly left hemispheric part of the brain. Functions associated with the right hemisphere are the interacting intuitive, non-verbal patterning and integrative function (Jacques, 1986: 124). Processing of information and the quality of managerial decisions is not a rational process when information is either uncertain or too costly to acquire. Reality is consequently a social construct in which managers actively combine their existing knowledge structures with external information and construct their own environment (Sparrow, 1999: 142). Construction of reality is consequently done by the integration of conscious and intuitive brain functioning. A summative view on work or output by Jacques is given by Ashton (2000: 4) in the following manner:

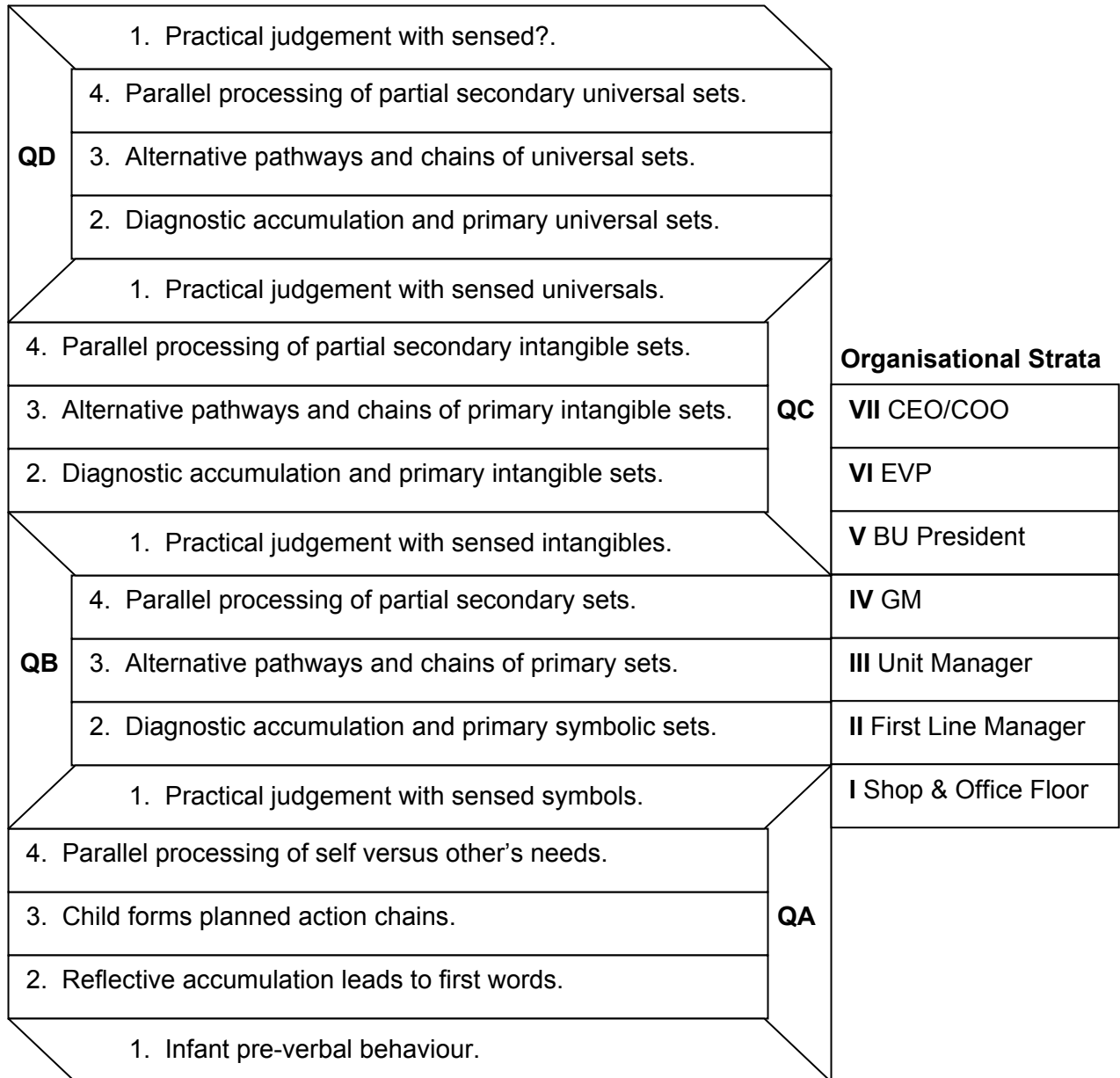
$$\text{Knowledge} + \text{Experience} + \text{Discretion} = \text{Work}$$

2.1.5 Stratified Systems Theory

The four cognitive processes are manifested in each of the orders of complexity, which forms the integrated view of stratified systems theory (Jaques, 1992:137). Stratified Systems Theory (SST) is illustrated in Figure 2.1.2 where cognitive

complexity is linked with organisational strata where certain levels of cognitive functioning may be required. The recurring pattern of the four cognitive processes is visible in the different orders of information complexity.

Figure 2.1.2: Task and Cognitive Complexity Strata (Jaques, 1992: 10 & 137)



Q = Quintave, the Quantitative or Order of Complexity

Jaques describes the figure above as four states recurring in groups of five, but operating in increasingly complex worlds. There are four cognitive modes of functioning in a hierarchical grouping into an ascending series of quintaves, beginning and ending in the practical, shaping mode (Bioss, 2000: 68 & 70). Quintaves are used by Jaques to illustrate that there is an overlap in the orders of information complexity, like the keys on a piano where this pattern occurs in octaves. Hierarchy is not only an organisational construct, it is a phenomenon intrinsic to the complexity of the natural world. People's mental processes are often hierarchical, especially when performing complicated tasks (Leavitt, 2003: 101). Complex skills are built up by complex activities. Evolution is the history of the complexification of living matter. Movement in Spiral Dynamics is also in the direction of greater complexity, which has four characteristics (Beck & Cowan, 2003: 62):

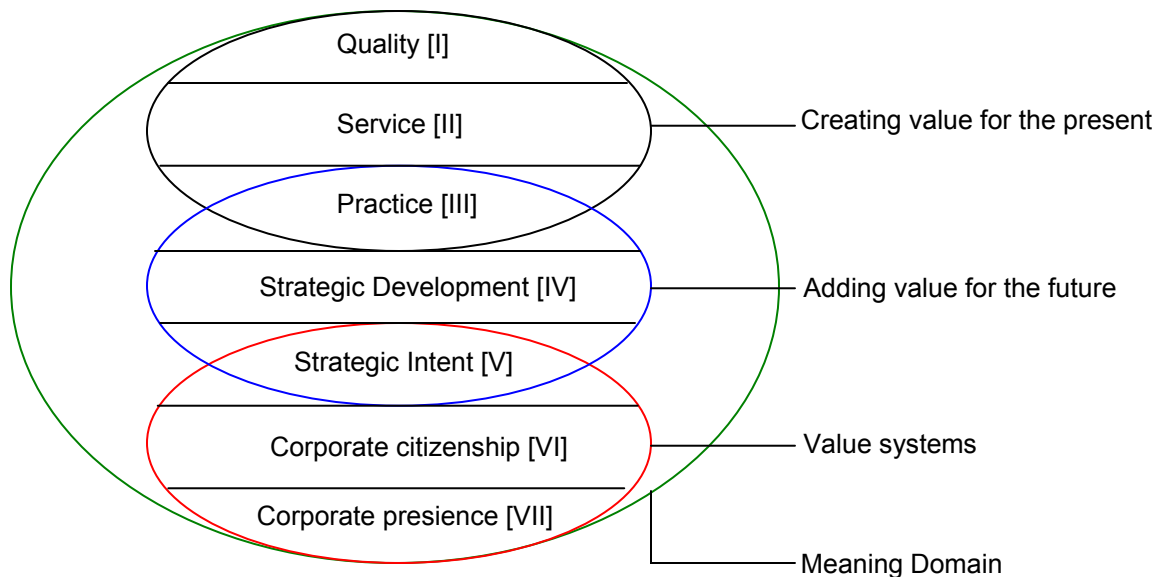
- Expansion of psychological space, including more multifaceted personalities and diverse organisational forms;
- Expansion of conceptual space toward bigger picture views, wider span of influence, and extended time frames;
- A progressive increase of alternatives toward more choices to make from a broader menu of ways to do things; and
- A progressive increase in degrees of behavioural freedom regarding possibilities of how to be, displaying emotions and acceptable kinds of human interrelationships

Another view on overlaps in the strata is given by Stamp (1997), who refers to Luc Hoebeke's gathering of the seven levels of work into four domains that arise from interaction of the enterprise and its environment. The interaction of domains of work and levels of work is illustrated in figure 2.1.3.

The output of work systems in a higher domain provides the framework for the underlying domain. It is evident from the domains and levels of work that Strategic intent is not only unique in an overlap of order of complexity, but also in

an overlap of the adding value for the future domain with the value systems domain. Practice has also two forms due to its position in the overlap of creating value for the present and assigning value for the future domain. The result of the overlaps is that practice can be expressed as continuous improvement as well as innovation. Strategic intent can be described as a strategic intent providing direction and strategic intent as viability.

Figure 2.1.3: Domains and Levels of Work



2.1.6 Levels of Capability in the Levels of Work

The theoretical framework of work strata was developed in two stages. Time-span of discretion was firstly developed in the 1950's. A universally recurring pattern of work stratification was repeatedly confirmed, but the reason for this phenomenon remained unknown. The revelation, or second stage, came only in the mid 1980's with the discovery of the almost perfect correlation between natural occurring work strata and qualitatively different types of mental processing (Solaas, 2003: 8). Discretionary content of work is its least evident feature, which is described in this section, where the level of capability of a person needs to fit the level of his work. Discretion is brought into play when the character of the work itself and the routines governing how the work was to be

done did not automatically determine for the person doing the job the best way to do it in every respect (Jaques, 1972: 34). What is experienced as psychic effort in work, the weight of responsibility, is entirely concerned with the discretionary content of work (Jaques, 1970: 81 & 118). Work strata are described in more detail in this section, where the theoretical frameworks of cognitive capability and levels of work interlink, as it is evident in Figure 2.1.2.

2.1.6.1 Stratum I: Direct Judgement

The individual proceeds along a prescribed linear pathway to a goal, getting continual feedback in order to proceed, and using previously learned methods for overcoming immediate obstacles as encountered, or else report back (Jaques, 1992: 24). People in this stratum are anchored in the rule, using a catch phrase, “all or nothing”. There is a constant attempt to translate abstract symbols into concrete objects (Stamp, 2002: 216), the whole of the task at hand is concrete (Jaques, 1986: 144). Methods and resources for the work can be completely specified beforehand (Hobrough, 1992: 9). Stamp (1993: 3) states that there is a mistaken assumption that there is no need to communicate purpose to people working in the theme of quality because their work does not call for the exercise of judgement.

2.1.6.2 Stratum II: Diagnostic Accumulation

A person not only overcomes immediate obstacles as they are encountered at stratum II, but must be able to reflect on what is occurring to note things that might indicate potential problems and obstacles. Accumulation must furthermore take place and data need to be consciously sorted to diagnose emerging problems, and initiate actions to prevent or overcome the problems identified (Jaques, 1992: 25). These people find it difficult discarding options. People in this stratum tend to take action within a rule framework. The rational approach is applied by solving each problem in isolation, described by the words “either/or” (Stamp, 2002: 217). Situational response is required where the precise objectives to be pursued have to be judged according to the needs of each

specific concrete situation (Jacques, 1986: 146). Work is to serve the customer, client or situation in a sensitive assessment and response to their individual needs (Hobrough, 1992: 10). A vulnerability of people working in service might be the expectation that the person is able to explain the purpose of the organisation which may have been poorly or ambiguously communicated. Clear translation of people's contribution in operational performance is necessary for this group of people. Responsibilities of these people include the interpretation of policy and the provision of frameworks for projects with a maximum time span of three months (Stamp, 1993: 7 & 10).

2.1.6.3 *Stratum III: Alternative Paths*

A person must not only use direct judgement plus diagnostic accumulation at stratum III, but must be able to encompass the whole process within a plan. The plan has a pathway to goal completion that has been worked out in the first place, by having pre-planned alternative paths to change to if need be (Jaques, 1992: 26). Extrapolation from the rule takes place, creating alternatives within a closed system. Connections are seen, even if the particular links are unclear. Co-ordination takes place by drawing together a number of separate strands. The outward looking approach creates order, using phrases such as, "given that" (Stamp, 2002: 217 - 218). Work can only be pictured in a series of time slices through imaginal scanning. A stratum three unit is the largest bureaucratic system in which mutual recognition can still be assured (Jacques, 1986: 147 & 313). Resources to be managed comprise a mini-organisation, which includes a set of people, equipment and premises (Hobrough, 1992: 12). The focus is on maintenance of practices and systems for providing services and making products such that costs are contained and the overall purpose of the organisation is realised. A balance needs to be maintained between new technologies and social cohesion when managing continuous change (Stamp, 1993: 11-14). Coherence need to be ensured of the whole operating unit. This depends on an effective system of communication procedures, which provide people in service with enough information to allow them to relate each separate

task or problem to the overall purpose of the unit. Support needs to be given to senior management and directors of functions in the management of change.

2.1.6.4 *Stratum IV: Parallel Processing*

This stratum differs from the previous two strata of direct management to general management. Several interacting projects need to be processed in parallel. Projects need to be packed in relation to one another in resourcing and time. A person must make trade-offs between tasks in order to maintain progress along the composite route to the goal (Jaques, 1992: 28). Here the concern is with strategic development where the yet unknown needs to be accounted for and modelled in planning the future (Hobrough, 1992: 13). An open system is framed by a closed context, where people's aims are to search for rule structure. Interests arise in the gaps in the total field or underlying pattern. Balance between ordered and not ordered is expressed in the phrase, "on the one hand ... on the other". This approach spans a broad spectrum, but focuses in detail on certain aspects, basing hypothesis on the assumption of an underlying pattern (Stamp, 2002: 218). Tasks require the individual to retain mental contact with what exists, but simultaneously a detachment from this experience and to work with ideas of things that are different from what exists. Neither the output nor the work can be foreseen in concrete terms, even by imaginal scanning (Jacques, 1986: 148-149). The manager needs to give equal attention to co-ordinating given activities, introducing new approaches and supporting the human aspects of the management of change. Stamp states that the interface between stratum III and IV is notoriously difficult because ideas and messages from people operating in strata IV to III can be heard as impersonal and concerned only with figures, the business and profit versus a need to address the personal impact of change (Stamp, 1993: 16-20). A combination of tending and trusting at this level ensures coherence through a shared understanding of the enterprise as a whole and of the rationale and need for the specific changes that are underway and likely to be introduced.

Coherence across the first four levels is captured in conveying a culture of diversity and continuous change (Stamp, 1993). Three elements from stratum IV that contribute to sustained coherence include:

- Putting the lived culture of the operating enterprise into words that do not lose spirit:
 - Ensuring that all systems for communication are open and used
 - Ensuring that all communication is conversation, meaning listening and talking
- Handling the paradox of the personal and the impersonal by conveying, directly and through symbols that the individual matters despite changes that threaten people.
- Communicating with immediate reports about the given, the new, the discontinued and the potential.

2.1.6.5 *Stratum V: Unified Whole System*

The true business unit, where profits are created, is located at this level. Coping at stratum V takes place by means of judgement with a constantly shifting kaleidoscope of events and consequences with far too many variables to map on a PERT (Program Evaluation and Review Technique) chart. Interconnections between the variables in the organisation and the environment need to be sensed in pursuing the plan, thereby making adjustments to interrelationships with a sensing of all the internal and environmental second- and third order effects (Jaques, 1992: 28). A dual perspective is necessary that encompass an outward view to ensure long-term viability as well as an inward focus to create and sustain optimal working conditions in the face of continuous social, economic and technological changes (Hobrough, 1992: 14-15). The enterprise needs to ensure its viability as a long-term financial and social entity. Vulnerability is to be overwhelmed by infinite and sometimes poorly filtered information from internal and external sources (Stamp, 1993: 23-25). People in this area look at issues with the minimum of preconceptions and do not divide issues into exclusive categories. Redefinition of rules takes place in this stratum, where problem

solving takes an overview, searching for a relationship between apparently unrelated material. People operating here might even expect that the problem will be changed or transformed before the solution is reached. A catch phrase in this level of approach could be, "let us create something" (Stamp, 2002: 219).

2.1.6.6 *Stratum VI: World-Wide Diagnostic Accumulation*

This stratum deals with network development:

- as to accumulate diagnostic information and to create a friendly environment throughout the world;
- making it possible to judge corporate investment priorities;
- to enhance the value of corporate assets as reflected in the balance sheet; and
- to contribute to corporate long-term success and survival.

Actions are directed to influence world forces like political, economic, social, technological and intellectual influences (Jaques, 1992: 29).

Work in corporate citizenship often involves a concern with transnational operating (Hobrough, 1992: 16). The individual oversees and changes institutions or theories from the outside (Bioss, 2000: 64). Links with the outside world are through comprehension and active management of turbulence of the environment to create a clear vision of enterprise within which a portfolio of businesses is sustained and developed. A central task in international growth will be to develop new businesses and embed them in their host cultures (Stamp, 1993: 32).

2.1.6.7 *Stratum VII: Put Business Units into Society*

This stratum needs to develop and pursue alternative worldwide strategic plans, producing stratum V units by development, acquisitions, mergers or joint ventures, drawing upon international supported financial resourcing (Jaques, 1992: 30). Culture, values and economies of nations and societies moves to the

forefront, where it needs to be related to the corporate culture, values and economies.

Articulation and communication throughout the organisation of the long-term vision, is a prime act of leadership of the CEO (Central Executive Officer), shared by the board and the corporate collegium (Jaques, 1992: 98).

Characteristics of psychological complexity in the corporate world are summarised in Table 2.1.1. Time span is the central cord that link levels of capability to the levels of work. The levels of capability themes are extensively used by BIOSS, while Jaques uses themes in what he describes as cognitive power. The time focus of planning gives an indication of the scope of planning that may be translated to changes in the work environment, which is a focus area in this research.

Table 2.1.1: Characteristics of Psychological Complexity in the Corporate World
(Stamp, 2002; Bioss, 2000; Jaques, 1992, Hobrough, 1992 and Jaques, 1982:
79).

Stratum	Levels of Work Theme	Levels of Capability Theme	Jaques' Theme	Maximum Time-span	Time Focus for Planning
I	Quality	Touch and feel	Concrete Shaping	3 Months	Daily/ Weekly output Targeting
II	Service	Accumulating	Task Definition	1 Year	6 Months Improvement targets
III	Best Practice	Connecting	Task Extrapolation	2 Years	18 Month Development priorities
IV	Strategic Development	Modelling parallel processing	Transform Systems	5 Years	3 Year Projects
V	Strategic Intent	Weaving	Shaping Whole Systems	10 Years	7 Year Business Unit critical tasks
VI	Corporate Citizenship	Revealing	Defining Whole Systems in the Wide World	20 Years	12/15 Year Strategic programs
VII	Corporate Prescience	Pre-Viewing	Extrapolative Development of Whole Systems	50 Years	25 Year Strategic envisioning

2.1.7 Change and Complexity in Managerial Areas of the Matrix of Work

Jaques defines complexity in terms of the number of variables operating in a situation, the clarity and precision with which they can be identified, and their rate of change (Jaques, 1992: 23). The complexity of a task is determined by the pathway, not the goal. Work is seen by Jaques as decisions about the best way to construct new pathways in unanticipated circumstances.

Human (1998: 75-76) states that cognitive complexity is simply the ability to manage many things simultaneously. The term revocrat is used by Human to describe a manager who is able to function in high levels of complexity, described as punctuations, as opposed to periods of equilibrium. Cognitively complex people can be described to:

- Have the ability to think multi-dimensionally;
- Consider multiple causes of and solutions to problems;
- Understand that any problem or issue is affected by numerous interconnected ideas;
- Treat simplistic explanations with suspicion;
- Thrive on complexity and contradiction; and
- Work with broad frameworks when solving problems, using heuristics.

Complexity in change will manifest in different ways within the levels in the organisation during a change process, considering the level of judgement necessary to take people through change (Ashton, 2000: 5). Stamp, writing on well-being and stress at work (Bioss, 2000), explains that the organisation is strong when people are in flow. Each level of responsibility adds unique value to the engagement in change with a rapid changing environment.

The discussion, which follows, is based on the levels of complexity in the matrix of work.

Pettigrew, A. and Whipp, R (Mabey, C & Mayon-White, B, 1993: 6) indicated that strategy creation tends to emerge from the processing of information about the environment at all levels. The implication is that people have to receive information to contribute to strategy creation. The depth of complexity will differentiate these contributions.

2.1.7.1 *Stratum III: Best Practice*

Linking strategic and operational change is one of five central factors to manage change for competitive success (Mabey, C & Mayon-White, B, 1993: 5-8). The first primary conditioning feature identified is to justify the need for change. Building capacity for appropriate action as well as supplying necessary visions and business direction are primary features in the linking role of best practice. Language used in this stratum indicates that real strategic decisions were already made.

It is evident that the role of best practice is near the operational side of a business, responsible for translating strategy into action. It is the cumulative effect of separate acts, which may even supply a new context for future strategic choices. Here are the secondary mechanisms, which describe this role:

- Breaking emergent strategy into actionable pieces;
- Appointment of change managers, relevant structures and exacting targets;
- Re-thinking communications;
- Using the reward system;
- Setting up local negotiation climate for targets;
- Modifying original visions in light of local context; and
- Monitoring and adjustment.

The aftermath of change requires anchoring changes firmly in the corporate culture. Kotter makes it clear that when people are left on their own to make the

connections, as is often the case, they can easily create inaccurate links (Kotter, 1996: 14).

2.1.7.2 *Stratum IV & V: Strategic Development and Strategic Intent*

The word strategy comes from the Greek word *strategia*, which is a combination of the words *stratos*, meaning army, and *agein*, meaning to lead (Human, 1998: 111). Strategy is in reality the translation of policy into action, where policy is created within a political framework chosen by citizens. Local scenarios need to be understood to engage with a particular situation in order to develop implementable strategies. The total field is only available in conceptual form, meaning: statistics, records, inventories, drawings and other types of external conceptual model. Management is done by concepts, data processing, scrutinising records and statistics, analysis of client load and community demand, reference to suppliers and stock in financial terms, overall dealing in abstracto (Jacques, 1986: 318-319).

McIntyre-Mills (2000: 97 & 103) states that it is essential to think in terms of interconnectedness, which require practical interventions at a number of levels and sectors. Systemic thinking for problem solving in linked domains is necessary to achieve sustainable lifestyles. It is necessary to work with structures, not merely within them, using an Eco-Humanism as a tool for inquiry, understanding and action.

2.1.7.3 *Stratum VI & VII: Corporate Citizenship and Corporate Prescience*

An example of linking used by McIntyre-Mills describes from the corporate citizenship viewpoint how their information is viewed “If employers and employees are seen first and foremost as global citizens who wish to maximise their chances of long-term survival on the planet...”.

Receiving information, which leads to high comprehensibility does not guarantee that people will respond to stimuli. Stamp states that high comprehensibility combined with low manageability leads to strong pressure to change, with the direction of movement determined by the person's sense of meaningfulness (Stamp, 2000a: 3).

2.1.8 The Tripod of Work

Requisite Organisation theory is based on mental health, which does not attempt to change people, but to bring out their best through the requisite design of social systems (Solaas, 2003: 17). Judith Hobrough (1992: 3) indicates that the full expression of the distinctive competencies as summarised in the levels of work depends not only on the individual capability to make decisions at a particular level, but also providing a climate for others to do the same. Three climate issues need to be in place, namely judgement that puts people in positions to use own discretion, coherence which is a shared understanding of overall purpose and reviewing that involves the updating of knowledge. Preedy and Hobrough (1998) express that it is important that each employee:

- Knows what is expected of them and how this fits into the overall picture;
- Understand their performance; and
- Has resources and development in order to do their work.

Effective decision-making and change depends on a pattern of connections, called the tripod of work (Hobrough, 1992). The tripod is made up of three elements, namely tasking, trusting and tending. Balance between the three elements within the tripod might change when organisations go through considerable and rapid change. The tripod of work is furthermore seen differently by people working in different levels of the organisation. Stamp (2000a: 10) refers to the tripod as the three "ts" for resilience in people and organisation. It is necessary to deepen the resilience of both individuals and the enterprise when a person has responsibility for the conditions in which others work.

Tasking involves the establishment of intended outcomes and agreement of objectives in terms of quality, cost and delivery parameters and timescales for completion. Trusting means the entrustment of people with responsibility to use their judgement to the limit of their current capabilities to achieve outputs as expected. Tending encompass monitoring as well as communication of a sense of purpose and relevance for work to create a context within which people see their work (Preedy & Hobrough, 1998 and Stamp, 2000a: 10).

2.1.9 Communication According to Complexity Strata

Communication is usually the symptom people express which is the effect of causes that need diagnosing, and which are not corrected by improving channels. The complexity strata or RO is an ideal model as a diagnostic tool, where symptoms are signs, which should be evaluated by using a theory (Solaas, 2003: 11). Jaques & Clement's view is that opportunities should be provided for every person to get on with work that benefits their potential (1994:xix-xx). Organisational structures and communication processes should be arranged to the properties of hierarchical organisations and human nature. The best way to achieve effective two-way discussions is to communicate with people in a way that is consistent with their underlying cognitive capability (Jaques & Clement, 1994: 161-163). Essential elements of information (EEI) should be specified. The necessary categories of information, which are needed as feedback from the subordinate within the context of the manager's work, need to be provided to the subordinate. Stamp (Bioss, 2000: 17) describes that energy can be realised when people use certain themes that overlap or run through certain strata of cognitive complexity, she refers to it as columns that may be treated as wavelengths. These columns could allow an imaginative two-way communication between people working at different levels.

The issue of matching complexity of data to the cognitive complexity at managerial levels is evident in accounting. Data that is too raw will lead to

confusion and possible data overload, this is in contrast with data that is too abstract, for managerial decisions at a certain level (Craddock, 2004: 10).

Jaques (1992: 99) notes that both format and content of information need to be stratum-specific, as indicated in table 2.1.2. Two types of information are mainly required:

- Information for decision-making; and
- Feedback information for controlling work progress.

Information requirement will differ under conditions of direct output and delegated direct output. Accountability and authority of information flow need to be specified. Decisions of communication of general information should not be made at a lower stratum for passing to a higher stratum.

Managerial communication to different levels can be done in different arrangements. A mutual recognition unit (MRU) is a three-stratum group where a manager, his manager and his subordinates meet (Jaques & Clement, 1994:262). There should be a mutual recognition unit, communication program. Organisational communication is another form of communication where organisational leaders wish to convey the same information to all of their subordinates at the same time and in the same way. This form of communication is seen as necessary when there is a situation that affects all members of the organisation equally, regardless of role, like changes in the vision or strategy, introduction of new policies, and major business developments (Jaques & Clement, 1994:285-286). It is only at strata VII and VI that business unit presidents act as an important gatekeeper in the organisational communication process.

Table 2.1.2: Managerial information and Decision Support Systems

(Jaques, 1992: 100)

Stratum	Information Content	Format
VII VI	Seek out and screen information by networking in the whole wide world to build corporate intelligence. ER/HR/TR/PA/GC analyses for corporate strategy.	Corp. P&L A/C Corp. Balance sheet reports Digests/Exec. Summaries
V	Financial models of business operations: P&L, cash flow, FOREX, capital resources & costs, etc. Business operations modelling by Pr. HR. T. staff specialists. Relevant corporate intelligence. Interdependencies between GMs.	P&L A/C Special purpose business analysis reports in secondary set categories
IV	Cost/volume analyses & variances & cash flow, including P&L impact. EEI from BU President, Interdependent, Colleagues and Upward Database access via human interpreter start here.	Variance accounts & data, to show exceptions EEI PERT
III	Tangible targeted outputs over a series of periods. Actual and aggregated costs of expended resources over a series of periods. Direct access to database.	Tangible Data Trend Format
II	Aggregated section targeted and achieved outputs, in tangible itemised form for specific period. Direct access to database.	Aggregates of actual data Bar Charts
I	Specified tasks. Quantity, Quality, Time, Resources & Methods Direct access to database.	Task layouts Performance First order language

P&L A/C = Profit and Loss Account

General clustering and tailoring of information for work at different strata would be done as follow (Jaques, 1992: 100):

- Stratum II and III Direct Domain: Primary sets are used, all data are therefore required, even elements making up the sets should be available for scrutiny.
- Stratum IV and V General Domain: Information needs to be provided in the form of essential elements for the problem at hand, not all the data. Managers deal with exceptions and special cases.
- Stratum VI and VII Strategic Domain: Information collected through the network in the whole wide world needs to be contributed to the corporate pool of intelligence.

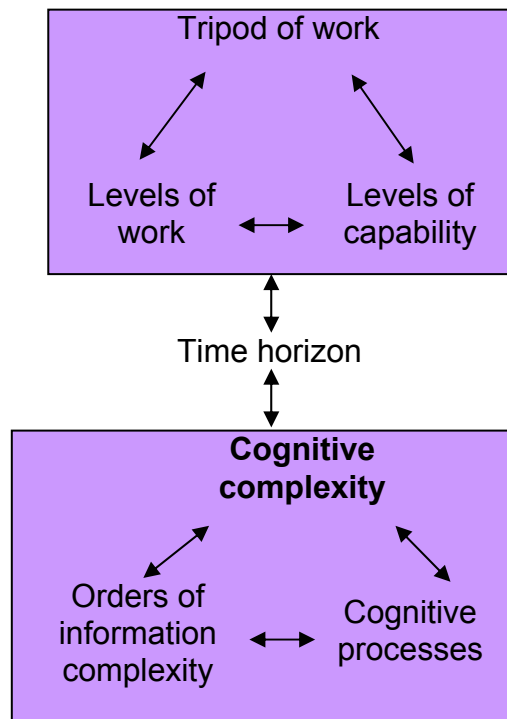
Databases and decision support systems at stratum IV and above exclude in a discretionary way all information deemed at a given moment to be non-essential. Executives at this level need not only be supported by direct operation of computer systems, but also by support staff who can use judgement in sorting out Essential Elements of Information (EEI) and setting aside non-essential data.

Hobrough (1992: 7) proposes that the outcome of a CPA programme can enhance existing programmes such as communication systems. There is, however, simply too much interaction and interdependency within organisations to have any hope of performing a change and avoiding second-, third-, and higher order ramifications (Pollock, 2000: 90). Pollock suggests that we might be moving toward a unified field theory of management where one must attempt to project the effects of the change overall, not just upon a portion of the whole.

2.1.10 Conclusion

A summary of key concepts related to the research topic in this section on cognitive complexity, is illustrated in Figure 2.1.4.

Figure 2.1.4: Cognitive Complexity in context of the research topic



The lower section of Figure 2.1.4 represents the individual's cognitive functioning. The upper half of the figure is illustrative of the cognitive application in the world of work. Time horizon is a golden thread which makes the theory requisite by linking cognitive functioning to application of work.

2.2 Change

2.2.1 A General Introduction to Change

2.2.1.1 What is Change?

The question relating to the nature of change can be traced back to the pre-Socratic philosophers, about 3000 years ago. Two perspectives, still evident today, can be traced to two thinkers: Parmenides (c. 450 BC) stated that reality was stable without change (referring to being), while Heraclitus (c. 500 BC) argued that reality was all flux and change (becoming) (Stacey, Griffin & Shaw, 2000: 195).

The understanding of change differs in interpretation from a cultural viewpoint. Change or crisis from a Chinese perspective involves hidden opportunities as well as potential dangers (Simpkins, 2003: 172 & Costello 1994: 4-5). The Greek delta (triangle) also contains the dichotomous aspect by being the most stable geometric form versus its indication of change.

Change is defined as a concept (Stickland, 1998: 62): “based on second order abstraction, created through a comparison or difference between sense impressions of two component states, while simultaneously comparing the time positions when those two impressions took place. Thus the concept of change requires an extra intellectual leap beyond the mere formation of concepts that reflect a state of the world”. Coleman’s definition of change contains key elements of the research’s focus, namely time as the continuum on which change occurs as well as cognitive processing of change.

Change can be purposefully created, thereby being pro-active or being unplanned in which the reaction to it will be re-active. Change typically involves moving an organisation from the current state to a desired future state, with a transition state in-between (Mabey, C. & Mayon-White, B., 1993: 88). Managing

constant change has been a theme for a decade or more according to Connor and Mackenzie (2003: 59), but discontinuous change is a much more recent phenomenon.

Turbulence is a further descriptor of the impact of unprecedented pace and diversity of change (Stamp, 2000a: 2 & 5). Stamp summarises turbulence's three prominent characteristics:

- There is order in what appear to be the most unstable circumstances, completely new forms arise out of the fluid and unpredictable;
- Regular irregularities can be observed over extended periods; and
- Tiny, often unnoticed differences, can have huge and unexpected consequences; this is popularly known as the butterfly effect.

2.2.1.2 Types of Change and their Impact

Explanations of change come predominantly from two traditions in systems approach (Rikards, 1999: 135-150). The soft system has the pioneering figure of Kurt Lewin who paid attention to the human and social factors. The second tradition, seen as the hard approach uses structural ideas like Total Quality Management (TQM) and business process reengineering (BPR). Rikards proposes an integrative approach like Peter Senge as a way forward for change programmes. There are many components in organisations that can change. Focusing on five aspects, namely behaviour, structure, products and services, and systems move the organisation into the realm of transformational change, versus a single component cosmetic change (Sturner, 1993: 13 & 17).

The starting point of change is seen at the individual level where it is filtered through the individual's frame of reference (Costello: 1994: 15&32). People need to alter their view of reality to make even a small change. Magnitude of change is a matter of perspective: what seems small to one person might be a major trauma to someone else, and vice versa (Hultman, 1998: 177). Change's impact on the individual influences the political impact, which has a final impact on the

organisation's culture. The equilibrium in the organisation, changes by changing the behaviour of organisations, groups and individuals. By changing one component, the equilibrium in an organisation changes, bringing about reduction of equilibrium and development of energy to achieve entropy (Mabey *et al*, 1993: 91). Costello states that it is necessary to communicate that change is continuous for the continued good health of the organisation.

Timeframe and complexity of change is illustrated in Human's (1998: 163-164) explanation of different types and approaches to change strategies. There are two basic approaches working with time-frame: on one side of the spectrum are evolutionary and transformational types of change that are incremental, on the other side are revolving and adaptive types that are punctuated. Types of change associated with complexity factors are: transformative and revolutionary change approaches which are metaphoric with a characteristic change in core strategy, while evolving and adaptive approaches to change are modifying only the contextual strategy. The two major factors that determine how comprehensive your change process must be, relate to the simplicity/complexity and the predictability/unpredictability of the change itself (Sasol, 2003: 99).

Three types of change (Costello, 1994: 40-47, Sasol, 2003: 99-100, French & Bell, 1999: 76 and Weiss, 2000: 27):

2.2.1.2.1 Transactional

Definition: Doing better or more, thus an improvement on the current reality.

Other labels: First –order, developmental, evolutionary, adaptive, incremental or continuous change.

These changes do not disrupt power and role relationships. They require little more than just installing new tools or procedures. They usually are meant to result in faster, better, cheaper, ways of doing things – without disrupting major patterns and work/communication flows.

Characteristics:

- Least threatening
- Requires systems-level support to survive

How to communicate:

Enable ideas for change to be created and developed from individuals affected, and involve people in implementation planning.

2.2.1.2.2 Transitional

Definition: Implementation of a known new state, which requires dismantling the present ways of operating and introducing new methods.

These changes are at least moderately complex and/or moderately predictable. They cannot be implemented easily within current structures. However, with help from others who have been successful in similar changes, the course of the change is relatively clear. Either there are models or consultants who can guide success, or it is possible to implement a process for the change that reliably leads to success.

Characteristics:

- Somewhat threatening
- Occurs over a set period of time, which is controlled

How to communicate:

- Effective two-way communication is necessary, assisting people in the transition process.
- Point out similarities and differences between the current and future state.
- Report regularly on the status of the change.
- Use milestones as measures of success.

Transition management may be managed in interlocking process as described by McCalman and Paton (1992: 7-10). These processes operate at different levels namely, the trigger layer, vision layer, conversion layer, and maintenance and renewal layer.

2.2.1.2.3 *Transformational*

Definition: Implementation of a new evolutionary state, which requires major and often ongoing shifts in organisational strategy and vision.

Other labels: Second-order change, revolutionary, radical, or discontinuous change.

These changes are focused on creating something that does not exist today or anywhere. Models for benchmarking are not available. These changes respond to radical shifts in the external environment, either due to market, social, technological forces, or a major innovation occurs that radically changes the name of the game. In this case, the change is both highly complex and very unpredictable. Major aspects of the organisation must change in order to continue to respond and produce in a new environment. The focus is not on one change, but on creating the capacity for different kinds and levels of performance. The move to turn bureaucracies into “learning and knowledge organisations” is an example of a transformational change goal.

Characteristics:

- Most threatening, the time-frame is not easily controlled.
- Future state is largely unknown until it evolves. It takes shape out of the remains of the death of the old state.

How to communicate:

- Clearly communicate change in the organisation's strategy and vision.

- Educate people about what transformational change is, why they feel the way they do and why it is not possible to answers all the questions they might have.

2.2.1.3 Change Models

Various models can be used as frameworks to understand and approach change. The Burke-Litwin model, illustrated in figure 2.2.1, can be used by OD practitioners to size up a situation to determine the kind of change required (French & Bell, 1999: 77-79). Interventions can be targeted at either transactional or transformational factors to bring about the desired change. Individual needs will be addressed by the transactional part of the model, but it is also influenced by organisational culture, which is part of the transformational factors of the model. Organisational climate will change by addressing transactional factors, indicated in green in the model. Transformational factors, indicated in blue in the model, transform the organisation and cause permanent change in organisational culture.

Figure 2.2.1: The Developmental and Change Model from Burke-Litwin (French & Bell, 1999: 79 and Stickland, 1998: 46).

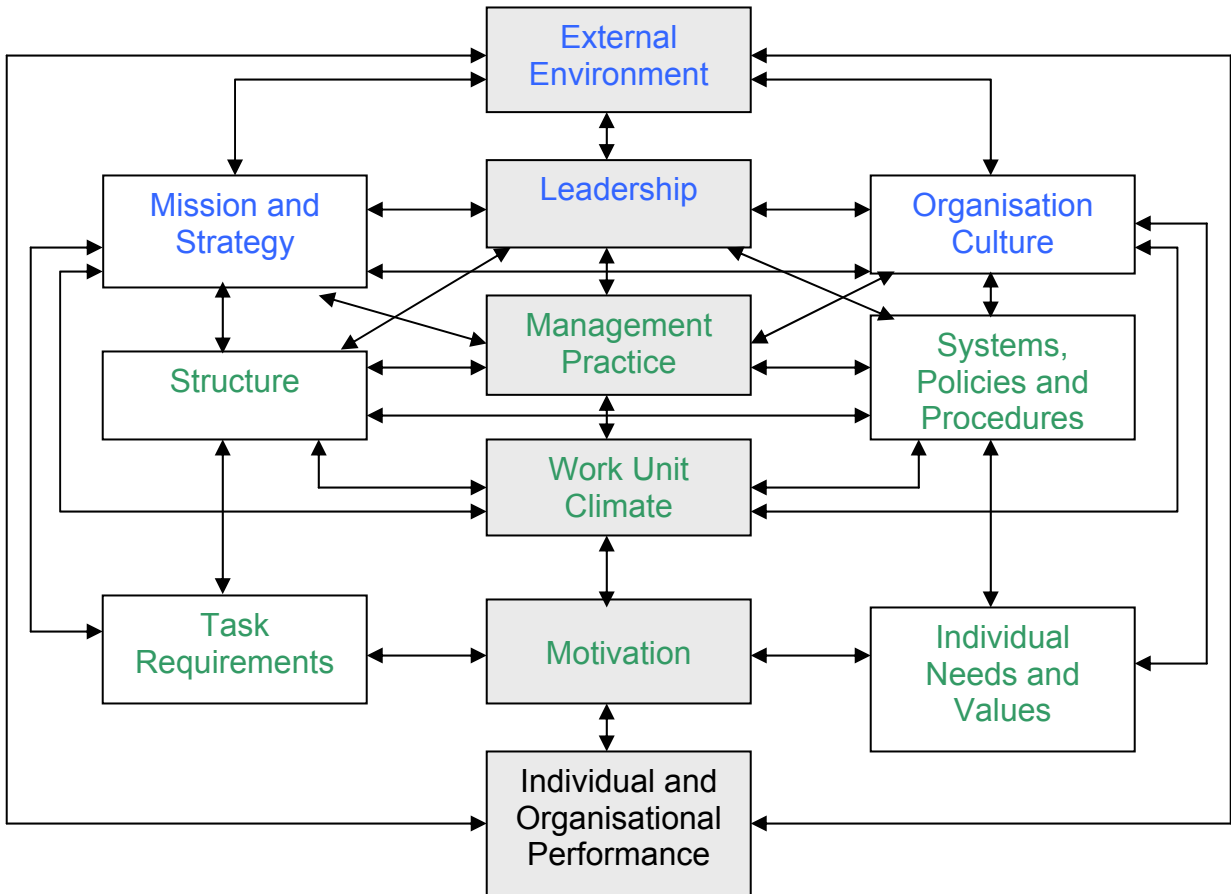
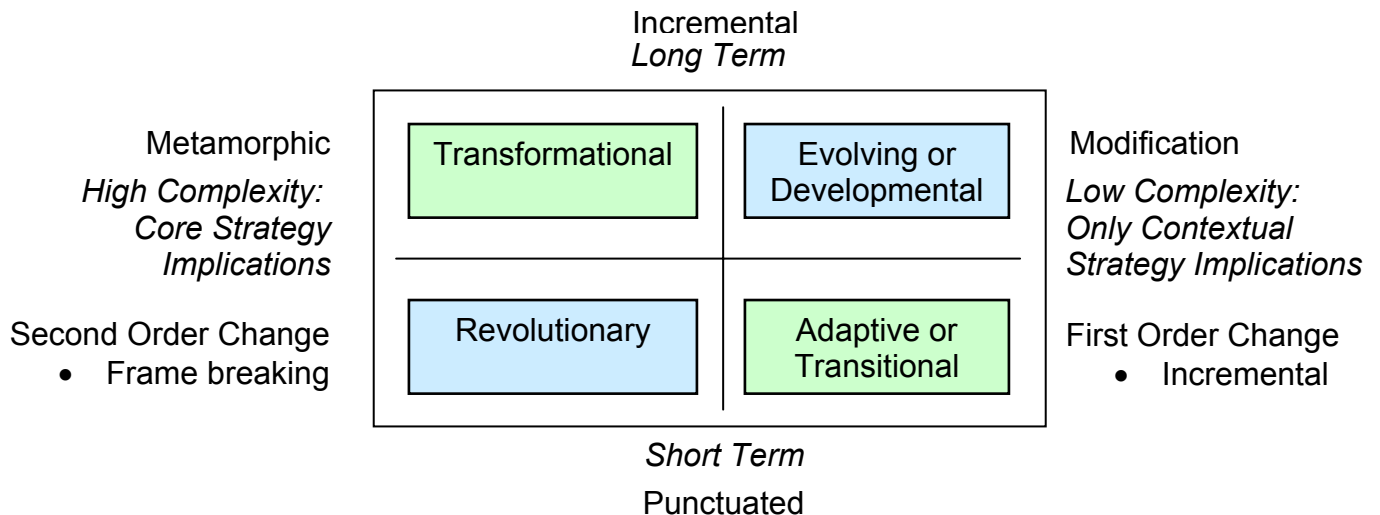


Figure 2.2.2: Model of change approaches (Human, Costello & Weiss and Stickland)



Various change approaches are plotted on a time axis and complexity axis in figure 2.2.2. A third dimension needs to be accounted for in the model above. Evolutionary and Revolutionary change is usually seen at industry level. Adaptation and Metamorphosis is seen to take place at firm level (Stickland, 1998: 50). Harper (1998: 27) writes that change is not about incrementalism, it is about quantum advances. The latter statement is evident in a shift from evolutionary change to revolutionary change that is needed by companies that need to be successful.

Change in itself can be seen ranging on a continuum of complexity. Three types of change have been identified (King and Anderson, 2002: 176 and Cascio, 1998: 295):

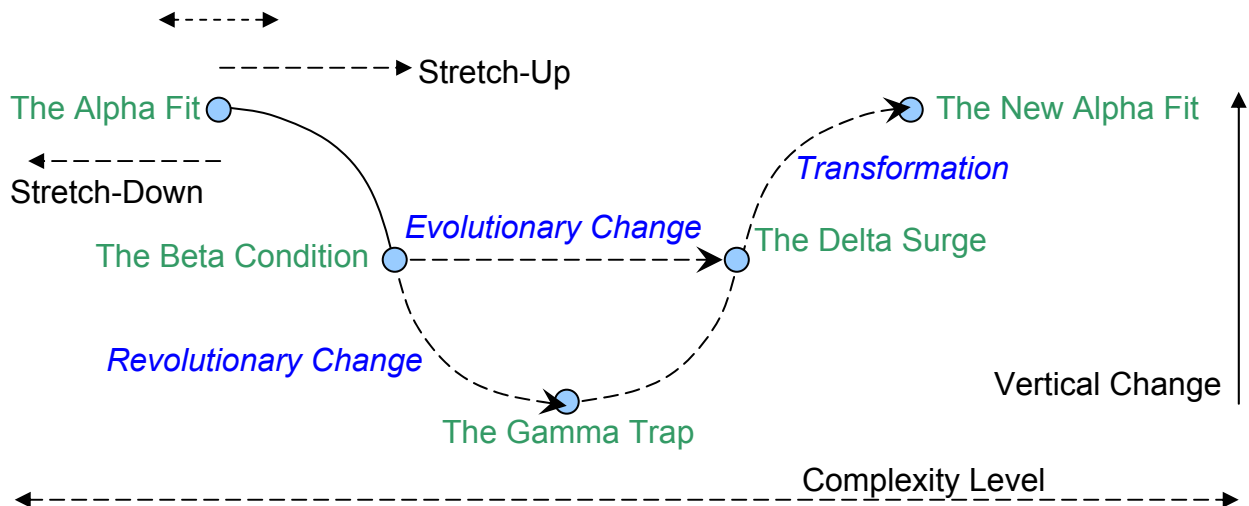
- Alpha change – change occurred along a stable dimension or set of stable dimensions. This represents a genuine change in behaviour over time, relative to a constantly calibrated measuring instrument.
- Beta change – the dimensions become redefined because of recalibration of the scale that measures change.
- Gamma change – the whole meaning of the rating concept is redefined.

Values are the foundation of people's communication skills and ability to change (Simpkins, 2003: 87). Stages of change can also be seen from a value systems perspective or otherwise stated, steps in the pathway of ^VMEME change (Beck & Cowan, 2003: 85-92 and Beck & Linscott, 1991: 48-52 & 272). An alpha state is described as the current system held by individuals and societies. A beta state is encountered after a realisation that something is wrong, with an intuitive counter response using the known system and even regressive search. The beta condition is a time of uncertainty, questioning, frustration and doubts. Beta problems are better felt than told. There are two options from this point onwards. The evolutionary option moves directly to a new alpha position, provided that

conditions are met like: previous problem resolution, individual potential, creation of dissonance, insight, overcoming social barriers as well as consolidation and support. The authors describe this type of evolutionary option as a second order change shift. This is a different classification as the Stickland model, probably due to the nature of value system changes which takes place. This is in accordance to what Graves referred to as the emergent, cyclical, double helix model of adult biopsychosocial systems development. A revolutionary option will follow a route to a gamma state where people are trapped, causing anger and hopelessness. Only when barriers are removed, ignored or overcome, the delta state is reached. Delta is an energy state where the new alpha is forged. The value systems shift from the gamma trap has evidence of the description of radical change. Radical change takes place when there is a shift or transition from a design that can be identified with no single archetype to one that has clear archetypal status. Research indicates that rapid change through an organisation is not only insufficient to bring about radical change, but may even be detrimental to its outcome (Ami, Slack & Hinings, 2004: 16). Variations on the theme of change, combined with steps in the pathway of ^VMEME change provide an integrative view of other theoretical models on change. This is illustrated in figure 2.2.3 below.

Figure 2.2.3: Steps in the Pathway of Change with Variations of Change (adapted from Beck & Cowan, 2003: 85-103).

Horizontal Change: Transactional



Complexity levels of the various types of change, as indicated in figure 2.2.3, show correspondence to the descriptions of figure 2.2.2. A timescale element can be observed when change moves from evolutionary or revolutionary to transformation.

2.2.1.4 Change as Business Imperative

Strategy's focus is a lot about managing change (Human, 1998: 120-121). It is the task of the strategist to manage two contradictions, firstly the tension between present and future. Secondly, there is the paradoxical tension between internal organisational workings and the external context.

There is however a general illusion of manageability. The sets of second order illusionary beliefs include the illusion of linearity, mostly described by the typical three-phase process of Lewin. An illusion of predictability follows on the linearity illusion, leading to a belief that the next phase of change can be anticipated. Illusion of control follows on the first two illusions, where managers exert extensive control over change (King and Anderson, 2002: 163). The notion of a sequential three-stage change model is becoming less appropriate in today's turbulent, flexible and uncertain organisational and environmental conditions. It is therefore not appropriate anymore to consider organisational change as a project or an event with a clearly defined beginning or end (Corporate Leadership Council, 2003). An increasing body of evidence shows that organisations do not follow the linear transformation process that early change theorists described (Ami, Slack & Hinings, 2004: 16). Simpkins (2003: 2), states that change seldom, if ever follows a linear, sequential, logical or predictable format, because it is a process, not an event.

Early warning signs may be needed to determine the impact and magnitude of impending change. McCalman and Paton (1992: 14&20) refer to a tropics test as a way of addressing key factors affecting the classification of a change situation. Key tropics factors are time scales, resources, objectives, perceptions, interest,

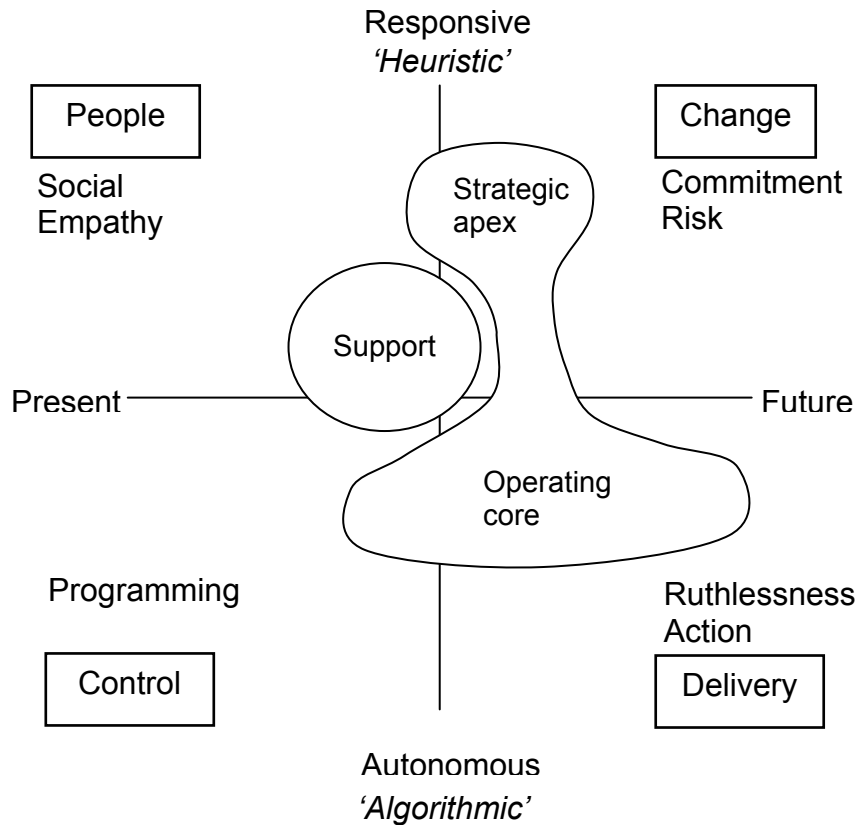
control and source. Considering the factors affecting the classification of change, it becomes possible to determine the optimum route towards a hard or soft solution methodology. It is noteworthy that a shift towards the softer side of the change spectrum increases the probability that a project falls into the complex category versus purely mechanistic projects. The degree of dependency placed on co-operation and acceptance of those directly affected by the outcomes of planning in projects, is a key differential between complex and mechanistic projects (MaCalman and Robert, 1992: 82).

The connection between the strategic role in Human's (1998: 83&100) description of change with stratified systems is clearly observable. Longer timeframes and response to a changing environment in figure 2.2.4 is associated with strategic issues.

It is evident from the model in figure 2.2.4 that there will be different focus areas in change with which Human's revocrat have to deal. Stickland (1998: 91) identified the following foci that can be measured, which may contribute to the areas of change: structure, process, behaviour, strategy, environment and the organisation's state.

The Porras and Robertson model of organisational change (French and Bell, 1999: 79-81) contains four major factors in the work setting to cause changes in individuals' behaviours. The factors namely: organising arrangements, social factors, physical setting and technology, are related to change and information needs as part of individual cognitions in the model.

Figure 2.2.4: The structure of a revocracy and the core competencies of a revocrat



Problems may be formulated in terms of “how,” “what” and “why” questions. Which formulation is used depends on where in the organisation the person posing the question or formulating the problem is situated in the revocracy as in figure 2.2.4, and where the organisation is situated in its own life cycle (Sasol, 2003:17):

- “How” questions tend to cluster in core units;
- “What” questions tend to cluster in buffer units;
- People in perimeter units tend to ask “what” and “how” questions;
- “Why” questions are typically the responsibility of top management; and
- In turbulent times, everyone must be concerned with everything.

Change experts and profiled companies (Corporate Leadership Council, 2000a) have cited several critical issues that may improve the ability of companies to

effectively manage a period of organisational change, linking it with various aspects in the organisation:

- Strategy: Establishment of transition teams can ensure consistent communication and tackle issues raised by the change.
- Organisation: Leadership should ask tough questions and challenge the way the company does business.
- People: Communicate the desire to retain key employees early in the process. Give priority to the “me” issues (personal opportunity, security and quality of the work environment).
- Communication: Communication plans should address four considerations, namely audience, timing, mode and message. Tips in communication include:
 - Communicate rapidly, honestly and frequently
 - Ensure consistency between messages
 - Establishing multiple mechanisms to reach employees
 - Repeating common themes

2.2.1.5 *Leading Change*

There are at least three basic definitions of change leadership (Sasol, 2003:14):

- The *task of leading change* (from a reactive or a proactive posture);
- An *area of professional practice* (with considerable variation among practitioners); and
- A *body of knowledge* (consisting of models, methods, techniques, and other tools).

A very useful framework for thinking about the change process is problem solving. Leading change is seen as a matter of moving from one state to another, specifically, from the problem state to the solved state. Diagnosis or problem analysis is generally acknowledged as essential. Goals are set and achieved at various levels and in various areas or functions. Ends and means are discussed and related to one another. Careful planning is accompanied by

efforts to obtain buy-in, support, and commitment. The net effect is a transition from one state to another, in a planned, orderly fashion. This is the planned change model.

At the heart of change leadership lies the change problem, that is, some future state to be realised, some current state to be left behind, and some structured, organised process for getting from the one to the other. The change problem might be large or small in scope and scale, and it might focus on individuals or groups, on one or more divisions or departments, the entire organisation, or one or on more aspects of the organisation's environment. The change problem can be treated as smaller problems having to do with the how, what, and why of change. Harper (1998: 26) explains change is not a set of tools and techniques, it is a state of mind. Executives need to go on the offensive by leading change, preparing for tomorrow, not being defensive by trying to manage change. It is important to change high-impact decision-making elements early in a transition process (Amis, *et al*, 2004: 35). An early alteration of high-impact elements sends a clear message that the changes being implemented will be substantive and enduring. It is important that managers spend time building relationships with key stakeholders involved in the change process to build trust.

It is the leader's role to identify productive areas of uncertainty and confusion and to lead the organisation into those areas to gain competitive advantage (Hodgson and White, 2001: 16). Change, like a merger, is seen as a process, not an event where communication and preparation is crucial (Gowing *et al*, 1999: 46). Belasco (1991: 28) makes a similar statement by writing that change is a process and not a destination. It is evident that the change process as described by Gowing and Costello comes from the Kurt Lewin's Force Field approach. Personal transitions can be described by three natural phases, namely endings, neutral zone and new beginning (Stickland, 1998: 44-45). Key concerns for managing the change process (Costello, 1994: 56-58), and action steps relating to communication are described under the headings of the phases of change.

2.2.1.5.1 *Present state (Unfreezing the frozen)*

Key concern: letting go

Motivation and readiness to change are created through disconfirmation or lack of confirmation, creation of guilt or anxiety and provision of psychological safety (French & Bell, 1999: 74). Planning communication strategies early and maximising opportunities for timely distribution of information is essential for effective interventions. Delivery channels need to be created for the planning phase to ensure employees and supervisors get information and support material (Gowing *et al*, 1999: 96&137). People, who do not sense a significant need to change, may not see the need to get out of their comfort zone and change (Harper, 1998: 28). Management may need to create a sense of urgency, if the organisation is not facing a crisis. Commitment for the urgency is gained when a sense of relevance is established. The primary communication should deal with loss and endings (Puth, 2002: 117-120), the following steps of Bridges suggest ways of doing it:

1. Identify who is losing what by describing the change in as much detail as possible, including both primary and secondary effects of change.
2. The reality and importance of subjective losses needs to be accepted.
3. People react to loss, not change, hence the view that people are seemingly overreacting.
4. Losses need to be brought into the open with acknowledgement, while signs of grieving needs to be expected and accepted.
5. Information needs to be provided on a continuous basis.
6. Clarification of what is over and what is not over is necessary. Occasions and activities can be used to illustrate and symbolise endings. The past needs to be treated with respect.
7. It needs to be shown that endings ensure continuity of what really matters.

Three “I’s” of strategic management apply to the unfreezing and change process (Harper, 1998: 30). The “I’s” start with making strategic inquiries, followed by gaining insights into what the future may hold, and concludes by developing strategic initiatives. People are more willing to discontinue the past when they see a different future ahead of them, in which they may have the opportunity to influence their destiny, if they can act proactively. There may be certain conditions that first need to be in place before change can take place, like the ^VMEME change described by Beck and Cowan (2003: 75-85). Six conditions for change for movement along the ^VMEME spiral are:

1. Potential in the mind/brain, people vary in terms of their change potential on a continuum from open, to arrested, to closed;
2. Solutions to current problems;
3. Dissonance and uncertainty present in the current ^VMEME system;
4. Insight into probable causes and viable alternatives;
5. Barriers identified and resolved; and
6. Consolidation and support during the transition.

2.2.1.5.2 *Transition state or the neutral zone (Change)*

Key concern: moving through transition from confusion to understanding

Characteristics of the neutral zone (Puth, 2002: 121):

- Anxiety levels rises, while energy is directed into coping and survival tactics.
- Signs of overload and flux are seen in: old problems re-emerging, absenteeism, and turnover.

Change is created through cognitive restructuring by helping the client to: see things, judge things, feel things and to react to things differently based on a new point of view. The view is obtained through identifying with a new role model or mentor, and scanning the environment for new relevant information (French & Bell, 1999: 74).

Motivating Change

- A first action step is to identify and surface dissatisfaction with the current state. Discrepancies need to be produced.
- Participation in change tends to reduce resistance and build ownership (Mabey *et al*, 1993: 92). Talking about the current reality is important. Employees need to be engaged in communication to determine their understanding and acceptance of changes taking place.
- Frequent and open communication with multiple channels is necessary. Top management needs to tell what they know and do not know.
- Rewards need to be aligned to support the direction of transition.
- Time and opportunity need to be provided for disengagement from the present state. The grieving process needs to be carried out effectively to avoid problems in future years (Gowing *et al*, 1999: 96&162).
- A carefully communicated training plan is often the key in unfreezing old behaviour (Gibson and Hodgetts, 1991: 336). Training programmes may include problem solving, team building, group facilitation, transition leadership tactics and especially communication skills and understanding (Puth, 2002: 122).

Manage the transition

- Develop and communicate a clear image of the future to avoid confusion.
- The following organisational arrangements need to be in place for the transition: transition manager, resources for the transition, transition plan and transition management structures (Mabey *et al*, 1993: 92).
- Short-range goals and checkpoints need to be set to create a sense of achievement (Puth, 2002: 122). Celebration of early victories is necessary to show evidence that the firm is making progress, helping to maintain the momentum and energy (Harper, 1998: 30).
- Communication is necessary to avoid isolation, special newsletters, flyers, but especially empathetic face-to-face communication is needed.

- Leaders must learn to describe the change and why it must happen, in one minute or less (Bridges & Mitchell, 2000).
- A communication plan needs to explain the changes in place, including details of the change with timelines.
- Boundary actions, meaning events, that demonstrate that change has come as well as a constant stream of information are steps to ensure that people are helped to respectfully let go of the past.
- Communication, rather than simple information, needs to reiterate the four P's of transition communication:
 - Purpose: Why we have to do this
 - Picture: What it would look and feel like when we reach our goal
 - Plan: Step-by-step, how we will get there
 - Part: What you can do to help us move forward
- Temporary solutions need to be created to temporary problems, which would include transition-monitoring teams.
- New attitudes and behaviour, need to be articulated to make the change work, where after it should be modelled, with practice and reward.
- Leadership should take note to:
 - Magnify problems, as they convince people that they need to let go of the old way
 - Mark the ending in a symbolic way
 - Look to have contact with individuals in transition, engaging in conversations about issues that are most on their minds
 - Give people access to decision makers
 - Capitalise on the creativity provided by the neutral zone
 - Resist the urge to rush ahead
- An emotional connection between the leader and the followers is critical in the neutral zone, compared to a logical approach, appealing to understanding of a new beginning

A marathon effect may take place during this stage (Bridges & Mitchell). Leaders higher up in the organisation tend to move through the change process more quickly because they can see the intended destination before others even know the race has begun. It is evidently possible that senior managers can forget that others will take longer to make the transition.

2.2.1.5.3 *New or desired state (Refreezing)*

Key concern: accepting, adopting, and executing alternative ways of doing things. Move from understanding to actualising.

Refreezing takes place by helping the client to integrate the new point of view into the total personality and self-concept and into significant relationships (French & Bell, 1999: 74). New beginnings also need the four "Ps": a purpose, a picture, a plan and a part to play (Puth, 2002: 123). Organisations that have downsized or restructured have undertaken a variety of initiatives to rebuild morale and commitment, employee meetings or focus groups were conducted in 60% of companies surveyed. The new employment contract between employees and the company needs to be communicated (Gowing *et al*, 1999: 46&97). Positive reinforcement is necessary from management, carefully communicating the value of continued compliance to new standards and goals (Gibson, *et al*, 1991: 336).

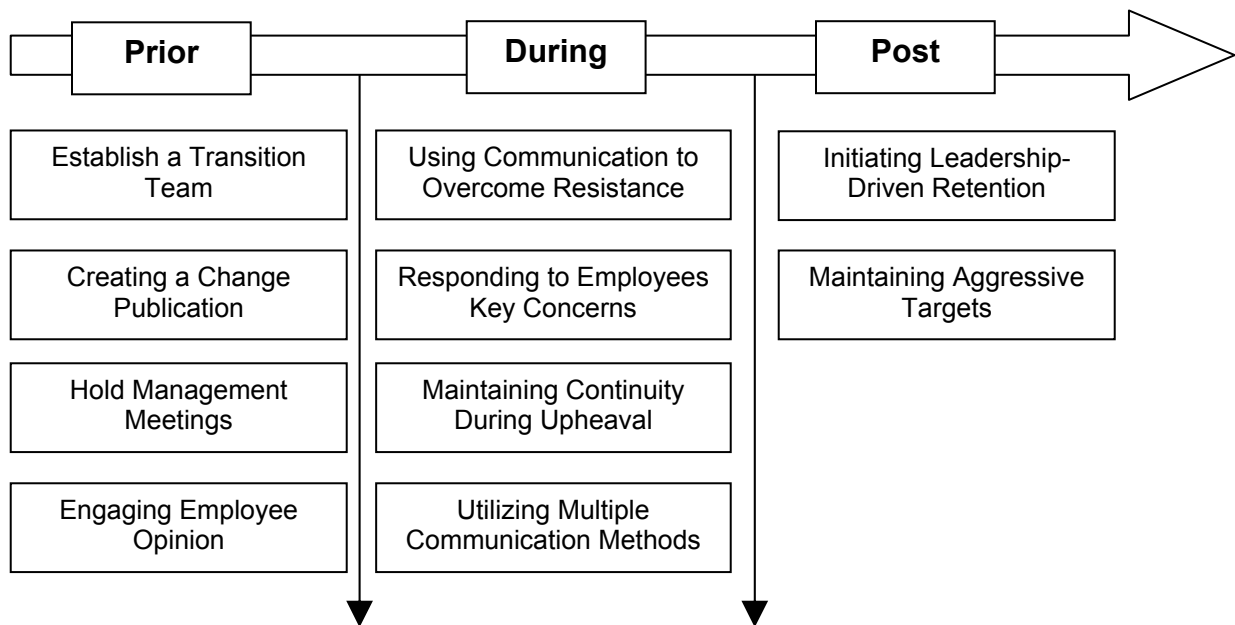
2.2.1.6 *Transition Management Frameworks*

Transition management is not a natural approach for managers. Most formal organisations are designed for stable states. Issues that need to be addressed for change to be effective are: resistance relating to individual components, control through design of organisational arrangements, and power, relating to informal organisational reactions (Mabey, *et al*, 1993: 90). Considerations for the nature of change should indicate the most appropriate means of managing change. The selection and role of the problem owner, location of change on a

change spectrum, force field analysis and gaining of commitment and involvement are areas of change analysis (McCalman *et al*, 1992: 14).

There exist different models for change management, which are closely related to communication processes. The five-phase model (Weiss, 2000: 28) is linked to Lewin's model in that there is a preoperational period in motivation of change, followed by creation of a vision and developing of political support. Transitions have to be managed (activities and structures included), followed by sustained momentum to refreeze changes.

Figure 2.2.5: Ten Change Management Practices (Corporate Leadership Council, 2000a).



Human Resources' role in change management is described to a great extent in the ten change management practices as illustrated in figure 2.2.5 above, where communication feature as a prominent factor to be considered. Employees need to be prepared for change, by providing a rationale. Messages need to contain a consistent theme, although tailored to specific regions. A change publication can be provided in addition to existing company newsletters, with updated editions on

a monthly basis. Management meetings can include interactive discussions, lectures and videos to build capacity in change. Multiple communication methods may include: quarterly meetings attended by all employees in range of the meeting location, an annual strategy dialogue with the top 150 people in a division to discuss business strategy as well as report from own teams, focus groups and e-mail.

It is evident from above that different change models are interwoven in attempts of planned change. The framework is given according the Equilibrium Model based upon systems of opposing forces. Within this framework, there are Organic Model elements flowing from power redistribution processes. There are, however, more complex dynamics underlying change, captured in the Developmental Model, taken from interrelationships between individuals (Stickland, 1998: 45-47). Components from this model that surface, may be used to find root causes, distinguishing between transformational components at the centre of the model, and transactional components at the outer rim of the model.

Puth (2002: 115) makes a distinction between change and transition in that change is situational, while transition describes the psychological process people go through to come to terms with new situations. Change is also described as something external that a leader is trying to bring about, while transition is internal, a psychological reorientation that people have to go through before the change can work (Bridges & Mitchell, 2000). The major focus at the starting point of transition is the old reality and identity that have to stay behind as well as who is involved in what. People can only make a new beginning if they have first made an ending and spend some time in a neutral zone.

Costello (1994: 102) indicates that it is necessary to have a process, which takes awareness, understanding, acceptance and change into account. The following is the process as indicated by Costello:

1. Describe the change and the reasons for it.
2. Explain the impact the change will have on the employee.
3. Encourage questions and allow for the expression of concerns.
4. Respond to any questions and concerns.
5. Restate or re-emphasize alternative behaviours and methods.
6. Gain commitment to change.
7. Confirm implementation plans and establish follow-through.

Derek Pugh's six rules for managing change effectively (Mabey *et al*, 1993: 110-112), have aspects that overlap with Costello's process:

1. The need for change needs to be established.
2. It is necessary to think beyond the change, thus thinking about costs and benefits for all stakeholders.
3. Change needs to be initiated through informal discussion, gaining feedback and participation.
4. Those concerned need to be encouraged to give their objections.
5. Managers have to be prepared to change themselves.
6. Monitoring and reinforcement of change.

Rules or guidelines to manage change may also be attributed to individual paradigms such as Emshoff's rules for leaders to meet the challenges of the future, as a transition from a traditional culture to a new emerging culture (Puth, 2002: 130-131):

1. Treat ideas as valuable, integrating ideas from followers and functional units.
2. Share information across functional boundaries and establish networks among peer leaders.
3. Empower followers by maintenance of communication.
4. Communicate in all directions.
5. Build trust and cooperation by basic technical skills to be a leader.

6. Make people heroes, this is seeing the link between motivation and bottom-line results.

Change can be dealt with by choosing the type of strategy to apply to change. The strategic orientation of the intervention of a change process may be described by the following major strategies (King and Anderson, 2002: 174-175 and French & Bell, 1999: 95):

- Rational empirical: where change is seen as a process of communicating the benefits of change to rational individuals, who are primarily motivated by self-interest. Empirical-rational strategies are based on the premise that people will change if and when they come to realise change is advantageous to them.
- Normative re-educative: change becomes about challenging established values, beliefs, attitudes and norms. Employees are re-educated into new methods of working techniques. Normative, re-educative strategies are based on the assumption that norms form the basis of behaviour and change comes from re-education, where old norms are discarded and supplanted by new ones.
- Power coercive: where change is imposed from above. Power-coercive strategies are based on the assumption that change is compliance of those who have less power than the desires of those in power.

Examples given above have a strong emphasis on a structured, managerial driven process. A search for common purpose and understanding through process work is described by Beck and Linscott (1991: 221), with the following three stages:

- Define the current reality through integration of differences in the direction of progress and development.
- Search the desired future as the highest solution available in the short, medium and long term.
- Set action plans that are practical, measurable and achievable.

Communication is seen as an important element in change processes. Communicating the change vision is a step in Kotter's eight-stage process of creating major change (Kotter, 1996: 21). This step builds on a sense of urgency, which most likely requires communication as well. It is suggested that every possible vehicle is used to constantly communicate the new vision and strategies. An aspect stressed by Kotter is that communication includes role modelling of the behaviour expected of employees. Development of a vision and strategy and thorough communication of it, is a key to most successful transformations (Puth, 2002: 114-117). The importance of these elements in a change framework is clearly observable when companies' change management models are looked at. American Express, Motorola and General Electric contain components to create a vision and communicate it (Corporate Leadership Council, 2003:3).

2.2.2 Complexity in Change, an Organisational Context

2.2.2.1 Domains of Complexity

The notion of a sequence of levels permeated western thought since the days of Plato. Bunge proposed nine different types of levels, where degree of complexity feature as a type (Stickland, 1998: 117). People understand problems from their point of understanding. A problem to one interest group could be of no concern to some or a solution to another. McIntyre-Mills (2000: 36) explains that models is necessary (also on qualitative data), which represents the complexity of reality, she uses for example a mandala for helping us think about social, political, economic and environmental complexity.

The organisation functions in different environments, they include technology, economic, political and legal, government/regulatory as well as democratic and social environments. It is the uncertainties in these environments that have to be managed. Environmental components can be analysed in terms of complexity, dynamism and richness. Weiss (2000: 319-324) describes environmental complexity as the strength, number and interconnectedness of the environmental forces that the organisation must manage. Organisational structure (tasks and work activities) is influenced by the complexity of the environment.

2.2.2.2 Systems and Change

The founder of general systems theory, von Bertalanffy, described systems as sets of elements standing in interrelation. Systems theory is defined as being concerned with problems of relationships, of structure, and of interdependence. Systemic thinking is used these days to refer to broader concepts to understand the world in terms of connections amongst its many parts (Campbell, Coldicott & Kinsella, 1994: 9-10). A system in a change setting can be defined as being an organised assembly of components, which are related in such a way that the behaviour of any individual component will influence the overall status of the system (MaCalman and Robert, 1992: 49). Information is important to systems

in several ways (French & Bell, 1999: 83-84). Feedback is information from the environment about the system's performance. Two kinds of feedback are required namely negative feedback, also known as deviation-correcting feedback and positive feedback.

Communications processes handling the transfer of information within and between systems is one of three process areas that need to be reviewed in a study of systems behaviour (MaCalman and Robert, 1992: 52). There is a movement in the second-level cybernetics position to move from the universal to local solutions. Ideas, policies and programmes become meaningful and useful only when there are opportunities for interaction between those holding the corporate intent and those with the local experience who are responsible for implementation (Campbell, *et al*, 1994: 30-31). There are actually three layers of organisation flow when the whole organisation is viewed from a systemic thinking approach (Dervitsiotis, 2002). The hidden part of the three layers of organisational process is human communication. An important reason for the omission of human communication is that it cannot be measured with numbers because it can only be described in terms of language data. Seeking how all the work will be coordinated, as well as developing ways to handle inevitable change, can be accomplished only through numerous conversations between those involved in task performance. As complexity of the task increases, the conversations increase in numerosity and complexity. The impact of conversations for action is often greater than that of material and information processes.

Peter Senge (French & Bell, 1999: 87) introduced learning organisations that require open systems thinking, integrating personal mastery, mental models, and building a shared vision as tools for change. The total systems perspective fails, like the behavioural and authoritarian schools of thought, to address the deepest human dynamics that remain hidden and elusive (Beck & Cowan, 2003: 71-73). Programs to influence systems or beliefs might work with concepts, systems,

beliefs and schemes. Beck and Cowan state that the deepest change factors are the evolutionary ^VMEMEs, or core intelligences. Changes in how people think will naturally influence what people think and why they behave the way they do. It is evident that there is a shift in foundational theories or approaches in academia, and specifically business. Postmodernism deconstructed previous ideas. Evolutionary psychology came to the fore, and replaced postmodernism with its relativistic world view. Revolutionary new understandings in chaos and complexity theories confirmed that the physical universe has an inherent tendency to create order. An integral vision, or a theory of everything moved to the fore, where string theory or M-theory indicates a possibility to unite theories of matter, body, mind, soul and spirit (Wilber, 2001: ix-xii & 94-95). It is from the developments in theory that it is seen that the transformational approach of organisational change has been eclipsed by the integral approach. Specific change technologies are used within what Wilber call an all-level, all-quadrant approach.

2.2.2.3 *Thinking and Tools assisting in Complexity*

The basic laws of cybernetics holds that as the external environment become more complex, systems need to become more complex as well to prosper. Increased sophistication of decision-making is reached by using tools and frameworks to help us in this process (Schoemaker, 2002: 16). Thinking tools are a means of understanding complexity beyond binary viewpoints. First and second order of change can be identified through characteristics found through various approaches (Stickland, 1998: 49). McIntyre-Mills (2000: 41-69) propose the use of thinking tools in Participatory Action Research (PAR). The following are examples of thinking tools:

- *Triple loop learning*: This tool contributes to holistic thinking, avoiding looking trough “coloured” glasses, making it possible to grasp links among variables. This tool raises the question if all people will easily create webs of meaning and contribute to hybridisation.

- *McLuhan and Power's Tetradic Metaphor*: thinking is contrasted between characteristic right- and left-hemisphere thinking, where the former thinking uses pattern-like qualities, described as qualitative or holistic thinking. The tetrad is a conceptual diagram illustrating interconnectedness.
- *De Bono's Thinking Hats*: This tool helps people to think about thinking.
- *Mental "Walk-Throughs" Using Scenarios*: People can use this tool to look at the wider implications of an action, like being at the receiving end of an action.
- *Lateral Thinking*: This tool can be used to describe the point of view of the other and the way in which their ideas fit together.

Thinking tools described by Schoemaker (2002) include scenario planning, key success factors, robustness analysis, strategic vision, options thinking and dynamic monitoring. The thinking tools as described, raise the question if or how every person can use a tool to disseminate information. Tools in this sense are external imposed ways to distribute information. The structure and type of information needs to be identified how the person defines the playing field of preferred information. This will link the tool to the person's natural way of looking for or at information. It is evident that a person needs to understand how he/she naturally uses the thinking tool.

There is a variety of views on complexity, one is the use of complexity sciences in business. It is the framework of looking at the complexity that shapes our use of it, Stacey *et al* (2000: 35&52-53) describes five different teleological frameworks: secular natural law, rationalist, formative, transformative and adaptationist. We can see that the here-and-now is not simply a point in time, using a transformative framework. There seems to be a macro-temporal structure from past to present to future as well as a micro-temporal structure of the present, which has a micro-past, micro-present and micro-future. A fractal notion of time arises from Hegel's paradoxical thinking on the time structure of

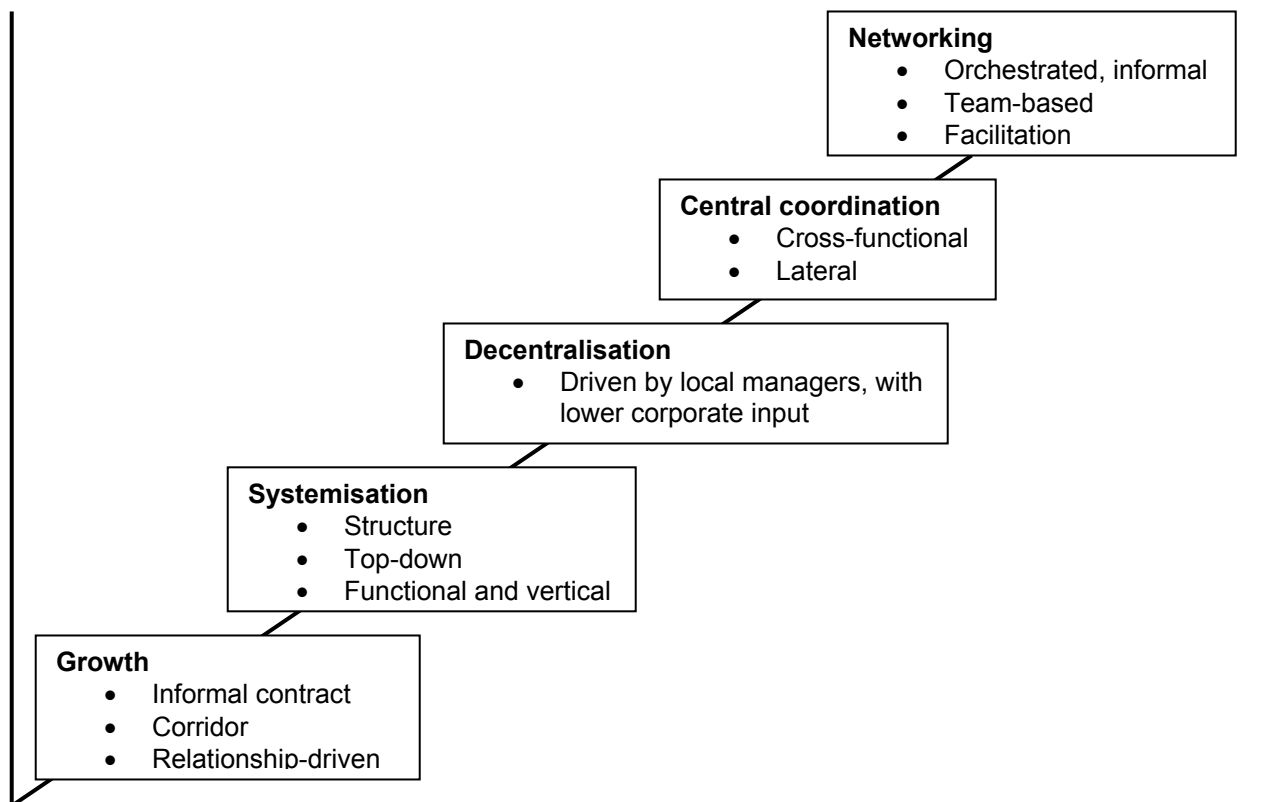
action. The concept of a synthesis of opposites indicates that there is a dynamic process, which can push individuals and society toward greater complexity. Beck and Linscott (1991: 141) indicates that the system represents a thesis and the struggle the antithesis, bringing about the synthesis with new insights and discoveries from the changing environment. Hegelian dialectic can be utilised through the role and function of a paradox. Paradox management allows people to see two horns of a dilemma connected at some point and not as mutually exclusive. The non-linear route is clear in the use of a dialectic, which corresponds to Dervitsiotis' (2002) view that the subjective or the soft aspects is that which relates to conversations-for-action. Language data are based on, and guided by people's mental model of the world.

2.2.2.4 Organisational design, resources and complexity

Requisite societies and requisite institutions are open societies in systems theory. Work can be done and energy created and stored in the form of physical and cultural objects and knowledge and information (Jaques, 1986: 7). Lawrence and Dyer (Carnall, 1999:96-97) indicated that a relationship exists between organisational design and complexity of the environment and scarcity of resources for the organisation. There are more appropriate forms for each combination of information complexity and resource scarcity. Information complexity is described as the diversity of (uncertainty about) the technologies and opportunities (and threats) in the organisation's environment. Henry Mintzberg (Schachter, 1997) provides cautionary insight by stating that a major failure of strategic planning has been when the more turbulent and complex the environment, the less able strategic planners are of getting a handle on it. The company is subsequently seeking more information instead of acting. A learning model is proposed as an alternative where staff reacts to turbulence and complexity. Corporate resources should be directed by executives to provide real-time information based on executives answering the question: "What real-time information will allow us to detect critical events the instant they occur", (McGee, 2004: 26).

The stages of an organisation's development have a direct influence on the organisational structure as illustrated in figure 2.2.6. Quirke (1996: 46 & 53), explains that as complexity increases, the organisation chart will move from an external framework to something like an endo skeleton. It is a framework around which informal lines of reporting, communication and cooperation centre.

Figure 2.2.6: Communication has different characteristics at each stage of development (Quirke, 1996).



Organisations move from uncoordinated siloed structures to organisational models that support integrated networks as they recognise the vital nature of employee communications (Corporate Leadership Council, 2002e). The internal communication department at profiled companies contributes to organisational operations by means of message formulation, active participation as well as

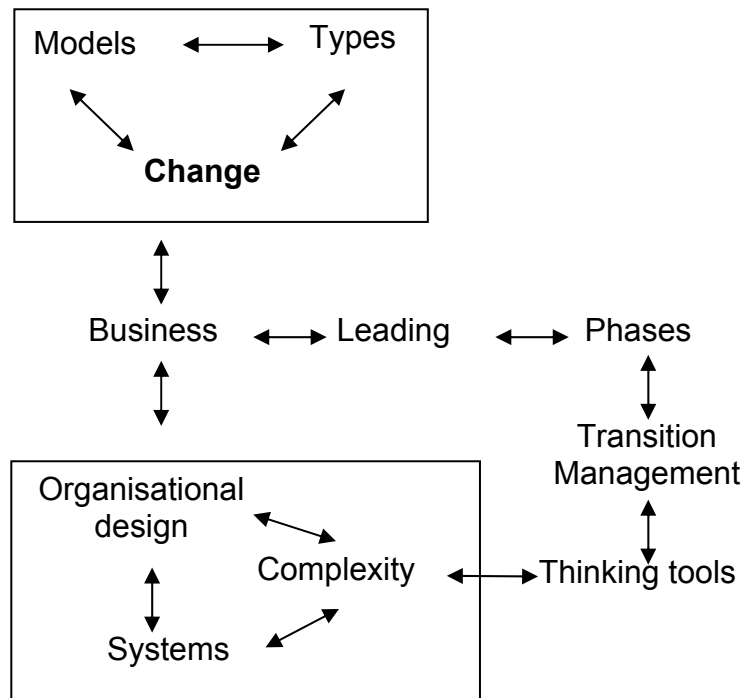
strategy and support. Central internal communication shape messages so that employees can attach meaning to corporate strategy.

Jaques (1957: 300) indicates that changes in social structure entail changes in formally established relationships. It requires the working out of new personal networks. Adherence to a role in each situation is only possible when roles themselves have been precisely defined.

2.2.3 Conclusion

A summary of major elements discussed in this section on change, is illustrated in Figure 2.2.7.

Figure 2.2.7: Change in context of the research topic



Change in the upper block of Figure 2.2.7 and its variations are described by various models. Various aspects in business, in the lower block, are influenced by change. Leadership is necessary in business to manage and lead through transitions and phases of change.

2.3 Information and People's Needs in Change

2.3.1 Information and Communication in Change

Communication is seen as the vehicle for driving change, shaping expectations and rallying workers around a core purpose and common message (Corporate Leadership Council, 2002d). Undercommunication of the vision is seen as one of the most common errors in change efforts. Kotter states that people will not make sacrifices, even if they are unhappy with the status quo, unless they really believe that a transformation is possible. Effective communication is the bridge between strategic plans for change and their realisation (Costello, 1994: 100). The biggest problem is poor communication, no matter how sophisticated the new information systems are developed (Stacey, Griffin & Shaw, 2000: 5).

Understanding and the articulation of the strategic vision and conceiving what the organisation might become in future become a key managerial challenge. Visualisation of strategic change is more than analysis, it requires the ability to think, conceptualise the future and look at possible organisational responses. Carnall (1999: 9-10) makes the point that successful strategic change demands a combination of cognitive skills and knowledge as well as process skills in the culture change arena. Structures of communication, authority and accountability are not enough for development, people learn through the way they think. Cognitive rules or reasoning are used by people to design and implement action.

Information can be transmitted, but communication, coming from the Latin *communicare*, means to share. Communication takes time, and time is precisely what is lacking in most situations of change. The best approach to communication (Quirke, 1996: 86-87) will depend on some of the following:

- Type of change;
- Degree of uncertainty to make change happen;

- Speed of change required; and
- Reactions to change, and likely triggers of resistance.

It is in the earlier work of Jaques (1957: 301) that he states that communication does not only include verbal statements and instructions, but also non-verbal and behavioural messages. Communication is the sum total of directly and indirectly, consciously and unconsciously, transmitted feelings, attitudes and wishes. Jaques states that communication is an integral part of the process of change, and occurs whenever social equilibrium is upset. Effectiveness of a communication system depends on the quality of the relationships between the people involved, based on the selectivity in the transmission of information, not on the extent of free flow of all communications. Kanter (1999) states effectiveness of communication in another way in that organisations need to manage complex information flows, grasp new ideas quickly and spread those ideas through the enterprise. What counts is whether people quickly absorb the impact of information and respond to opportunity.

2.3.1.1 *Communication Fundamentals*

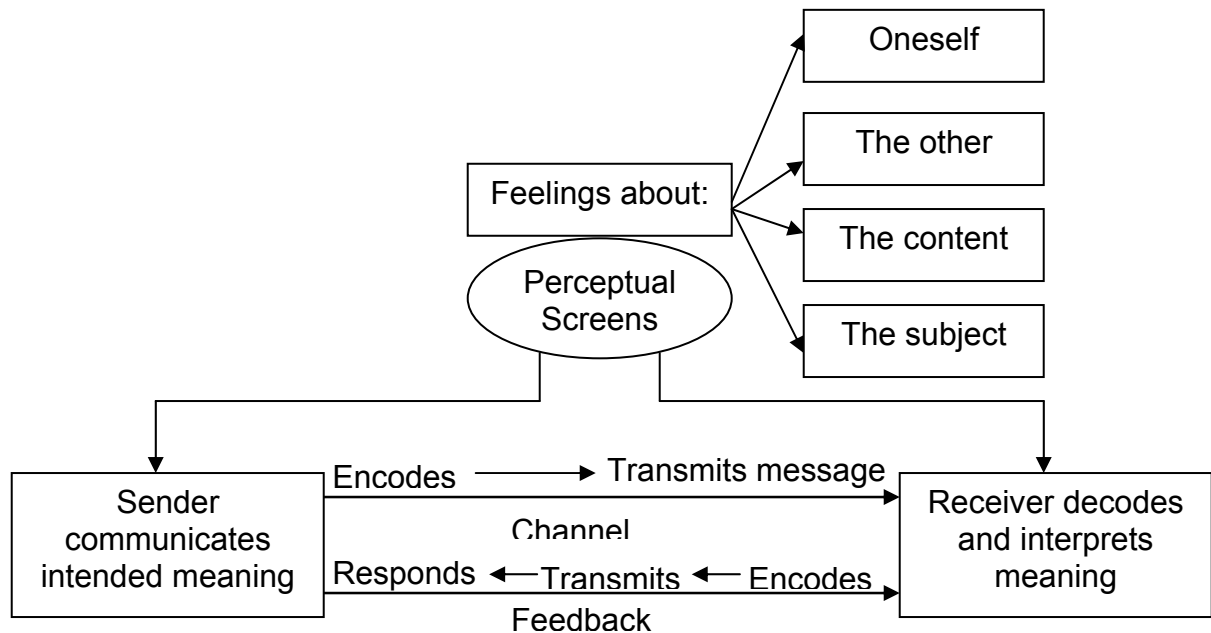
Pages of definitions can be provided for communication. A recent count amounted to at least 150 definitions (Steinberg, 1997: 12). Three clustering of definitions can be seen as technical, process and transactional. Communication can be defined from a process viewpoint as a complex and dynamic process of exchanging meaningful messages.

2.3.1.1.1 *Communication Processes*

When communication can be described as a process or flow, problems or deviations would then be blockages in flow (Robbins, 1998: 310). Communication contains the following: who says what, in which way to whom with what effect (Weiss, 2000: 163 & 164). The subject of communication was once referred to as rhetoric in ancient Greece. Aristotle who lived and taught in Athens has written in his: *The Art of Rhetoric*, that speech is composed of three

parts: the speaker, the subject and the person addressed (Argenti, 1998: 32). This is surely the root of modern communication theory where the speaker is the communicator and the hearer the audience in today's terms.

Figure 2.3.1: Perceptual Process in the Communication Process (Adapted from Weiss, 2000: 165 & 166 and Robbins, 1998: 312).



The figure above is a combination of the linear Shannon and Weaver model with the circular Osgood and Schramm model (Steinberg, 1997: 17-18). Interpretation of meaning, a prior gap in the mentioned models was overcome with a transactional model of Verderber, included in figure 2.3.1 as perceptual screens.

2.3.1.1.2 *Communication Direction and Structures*

Flow of communication is often categorised as vertical or lateral. Vertical communication can be subdivided into a downward and upward direction (Robbins, 1998: 315-316). Downward communication involves the flow from a higher organisational level to a lower one, where upward communication's flow is in the opposite direction. Downward communication is mostly job related, but it

also provides information that will convey a sense of mission and an understanding of corporate goals (Gibson and Hodgetts, 1991: 212). A study by the International Association of Business Communications found that the subject of organisational plans for the future, ranked first among subjects most interested among respondents, which should be covered in downward communication. Lateral communication takes place among people in the same working group or level. Healthy horizontal communication can help in the avoidance of hoarding of information. Diagonal communication takes place between people of different levels of the organisation and in different departments. Diagonal information flow contributes to the concept of authority of knowledge, rather than authority of position.

Three different levels of networks are evident in organisational communication (Gibson, *et al*, 1991: 246-250). The entire organisational communication system is firstly a network. People also use personal and individual networks to get things done in an organisation. There are thirdly group networks as in project groups and departments. Different forms of networks are possible, but the main types are generally described as the wheel or star, Y, the chain or line, that are centralised networks and the circle and all-channel system which are decentralised networks (Steinberg, 1997: 102).

Information can be disseminated, utilising the different channels and flow of information in a communication strategy. Commonly used strategies for discussing issues and concerns during change include one way, multi-directional and personal communications as explained by the examples in table 2.3.1.

Table 2.3.1: Strategies to provide information (Corporate Leadership Council, 2002c)

One-Way (Informative)	Multi-Directional (Interactive)	Personal (Facilitative)
Intranet sites	'Brownbag' lunches with management	Counselling: personal adjustment, career, education
Memos/internal mailings	Hotlines	Mentoring
Payroll inserts	Rumour 'czars'	Sensitisation sessions
Satellite presentations	Town hall meetings	"Workout" sessions
Newsletters	Video-conferencing	

The early mass-communication model describes information flow in a mass media setting by stimulus response theory where communication was directed to isolated individuals who constitutes the mass. A two-step flow model was introduced based on research findings where people reported that they are in social contact with opinion leaders. It is consequently evident that information from the media moves or flows in two stages, firstly to heavy users of media, who retransmit the information as a second stage (Steinberg, 1997: 136).

2.3.1.2 Communications Mediums

How the communication is transmitted, is important, if not more important, than what is communicated (Weiss, 2000: 167). Complex communication may be best transmitted face-to-face.

Communication technologies used at profiled companies (Corporate Leadership Council, 2002d) included the following: internet, intranet, e-mail, video-conferencing, face-to-face, newsletters, phone, DVDs, CDs and business television. Company newsletters was reported as a success by companies, sending it out in various ways like postings on an intranet, distributing it in hard and soft copy and posting it to employees' homes. Successes in communication practices included the use of e-mail, video-conferencing, face-to-face

Cognitive complexity's influence on information needs in change

communication and newsletters. Some failures in communication practices included the use of intranet, business TV and video-conferencing. Reinforcement of messages by multiple channels was found to be highly effective. Using a combination of face-to-face, print and electronic media can guarantee to reach employees at least once. Success of the medium of communication will depend on the purpose or type of message that is needed, as illustrated in table 2.3.2. High information richness is needed to reduce ambiguity, while data capacity decreases as a result of the medium, which is used.

Table 2.3.2: Mediums of communication (Corporate Leadership Council, 2002e, Weiss, 2000: 167 and Robbins, 1998: 322).

<i>Information Medium</i>	<i>Information Richness</i>	<i>Data Capacity</i>	<i>Type of message</i>
Face-to-face discussions	Highest	Lowest	↑ To Reduce Ambiguity (Routine, clear)
Small Group Meeting	High	Low	
Large Group Meeting	High	Low	
Video-conference	High	Low	
One-way video or Satellite broadcast	High	Low	
Online Meeting	High	Low	
Telephone	High	Low	
Electronic mail	Moderate	Moderate	To Reduce Uncertainty (Non-routine, ambiguous)
Individualised letter	Moderate	Moderate	
Personalised note or memo	Moderate	Moderate	
Formal written report	Low	High	
Flyer or bulletin	Low	High	
Formal numeric report	Lowest	Highest	

Regular communication channels such as company newsletters, magazines and formal meetings can be expanded to include items such as face-to-face sessions

with top management. Coffee sessions and bulletin boards are useful to provide detailed daily news updates of progress of a change process. Large change processes may warrant the use of town hall meetings, call-in talk shows broadcasted over close-circuit television, personnel hotlines, anonymous drop boxes, distribution of newsletters and handbooks, and local community newsletters. Face-to-face information and question-and-answer sessions with management at all levels as well as publishing of frequently asked questions are further options of communication mediums (Gowing *et al*, 1999: 46&123).

It is often Human Resource (HR) employee's role in communication design and maintenance. Communication methods include: new employee orientation, bulletin boards, communication meetings, newsletters, employee handbooks, suggestion programmes, complaint procedures, electronic mail, surveys and open door meetings (Grobler, Wörnich, Carrell, Elbert & Hatfield, 2002: 15-16). It is evident that the use of communication mediums has shifted with technology development.

2.3.1.2.1 Connectivity and Technology

People need to be connected with each other in complex systems. Connectivity is increased by surface areas, this in turn means better digestion of information. The surface areas lies in the use of communication channels like hallway conversations, networks, employee group meetings and website hyper-links (Olson and Eoyang, 2001: 143). Technology is a driving force behind global business and communication and it is essential for moving information instantly around the globe. Organisations of today are seen without walls, thereby making communication even more important if people are at different locations. Advances in technology like video-conferencing, e-mail, intranet and internet help facilitate communication between individuals in remote locations. The intranet may serve as a virtual community for employees working together in global teams. E-mail is a tool to utilise windows of opportunity by facilitating around-the-clock work, thereby eliminating time and location issues. E-mail has

revolutionized the quick and broad distribution of information, but it lacks engagement and reduces the amount of face-to-face communication. A study reported that 85 percent of participants reported that e-mail has improved organisational communication. It is advised that e-mails need to be kept relevant to direct employees as more than 30 percent of e-mails received by employees are not directly related to their jobs (Corporate Leadership Council, 2002d: 4-6). The free-flow of e-mails through organisations by-pass traditional hierarchies, functions and vertical routes of previous information flows. Managers' roles in these new developments are to act as information brokers, managing a web of interactions that take place within the organisation. It is a management need to have a good mental model of how knowledge and information is shared across the people with whom they interact. Sparrow (1999: 145) states that interactions of information involve different cognitive requirements for data gathering and searching, co-ordination, communication, collaborative problem solving, and monitoring of transactions.

Internal communication successes at companies profiled by the Corporate Leadership Council (2002e: 11) have shown extensive use of electronic communication. Instantaneous communication and getting information quickly to employees is achieved by electronic communications. Manager-employee interactions are encouraged by intranet usage where communication can be tracked. Intranet information can be kept up to date, providing solid information about the organisation. Advantages of corporate intranets or employee portals include (Corporate Leadership Council, 2002a):

- Remote access, where an employee can communicate with a supervisor from any location with access to the intranet or portal;
- Anonymity, employees can approach management without being face-to-face, which may compromise their employment situation; and
- Bolstered employee morale, by having a forum to vent their frustrations to management, they feel as if they are being heard and appreciated.

2.3.1.2.2 *In contact with the audience*

A time-tested phrase in communication is: know your audience, it is the first place to start (Raphael, 2004). Issues to consider in a communication strategy are the average age of the audience, education level of employees, location of employees and what they want to know. Instant messaging is a way to send quick messages in real time, which is short and in conversation style compared to long newsletters. An internal bulletin board on the intranet can serve as a place where employees post questions viewable by all. People respond, however, better to in-person communication than to a written format, hence the need for developing interpersonal communication skills. A company can be successful by simplifying messages, by creating messages from the audience perspective and quickly sharing it with a selective audience (Corporate Leadership Council, 2002e). Two aspects of communication act like a pair, encapsulating the message, meta-communication and subliminal communication, which come to the fore, especially in face-to-face communication. Meta-communication is experienced as the consequence of thoughts, intentions or behaviour during the communication process. Subliminal communication is a subtle activity, it will register mainly on people's subconscious level (Simpkins, 2003: 17).

The importance of face-to-face communication strategies during time of change is highlighted in Corporate Leadership Council studies (2002b, 2002d & 2001a). An appropriate balance between face-to-face interaction and e-mail need to be maintained by executives (Corporate Leadership Council, 2002d). Face-to-face communication is seen as irreplaceable. Meetings are valued for the high level of engagement among participants, but that is unfortunately costly and limits all participants to a single time and one location. Weekly conference calls may provide an opportunity to ask relevant questions regarding the change initiatives and receiving responses on it. Direct managers were identified, being in a position of playing the most important role in communication, as employees trust them, and they act as mediator between the top and bottom of the organisation.

The main communication outlet in a company having an online newsletter available was still managers, contextualising information. Profiled companies utilised multiple communication strategies for communicating change initiatives to employees, which included:

- Conducting weekly conference calls between change agents and managers;
- Holding town hall meetings;
- Utilizing online communication tools like an online newsletter and website; and
- Empowering management to communicate to employees

2.3.1.2.3 *Message in the medium*

Kotter (1996: 90-93) includes the use of multiple forums as one of the key elements in effective communication of a vision. This critical information can take the place of much useless information that clogs expensive communication channels. Additional principles in effective communication include simplicity, the use of metaphor, analogy and example, repetition, leadership by example, explanation of seemingly inconsistencies, and give-and-take.

Lessons learned from restructuring, pointing to the following issues relating to open communication (Gowing, *et al*, 1999: 94), show a high degree of similarity with Kotter's principles:

1. Candour: this works better than silence and whitewashing.
2. Repetition: anxiety interferes with understanding, problems occur when assumptions is made about what is heard and understood.
3. Multiple methods: differences in people's preferences need to be catered for.
4. Consistency: alignment of messages provides clarity and increase confidence of alignment of leadership.

5. Frequency: The amount of communication should be directly proportional to the magnitude of change or experienced uncertainty, not information available.

Reinforcement of messages provides employees with the opportunity to connect with the message. The use of multiple channels is a key in getting a message across (Corporate Leadership Council, 2002d).

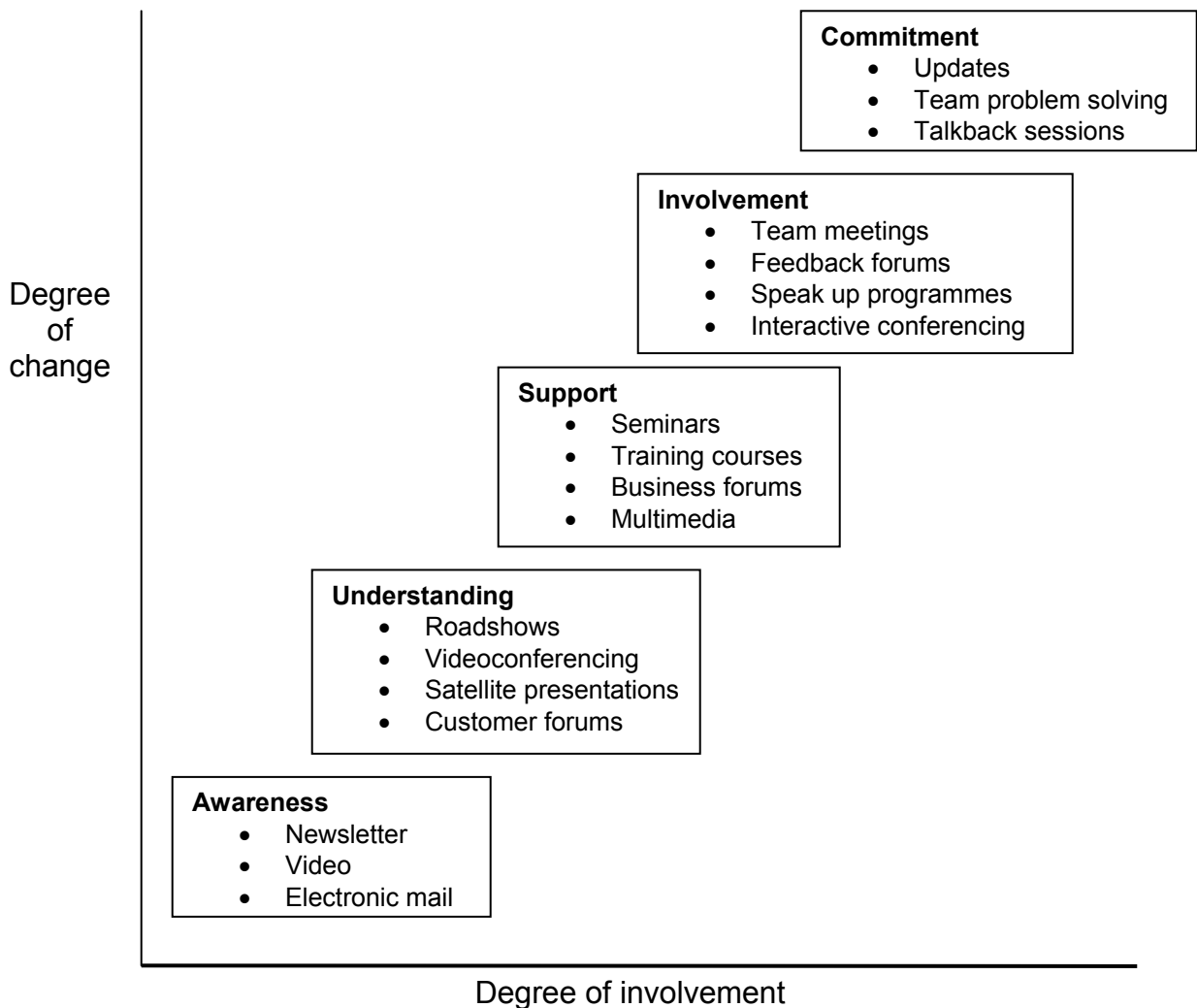
Actions that may enhance the issues indicated above are the monitoring of change and communication effectiveness, and measurement of progress towards change followed by communication of early successes. Development of a shared vocabulary will enhance a common language between business units (Corporate Leadership Council, 2003:3).

2.3.1.2.4 Involvement as choice of the medium

Communication programmes at British Telecom during an organisation development strategy included team briefings on a monthly basis, an audit on other communication systems, and the development of a quarterly video magazine (Mabey *et al*, 1993: 161). A tool to break down barriers between employees and their supervisors, is road shows, where senior managers take a tour throughout a company's multiple sites (Corporate Leadership Council, 2002a). A different tool to help supervisors communicate change management policies and organisational initiatives can be described as a meeting-in-a-box, which contains communication tools such as PowerPoint presentations, key points for discussion and personalisation of content. Most chief executive officers are adept in using the myriad elements of marketing during change, but the following important elements may be left out which is very important: listening in, working with lead customers and developing a theme. Some ideas might emerge from the field, rather than the corporate centre. Change initiatives need furthermore a clearly articulated, high-level theme to which employees at all organisational levels can respond to. Effective themes are accessible, but it contains a good deal of complexity (Hirschorn, 2002: 102).

Most communication channels within organisations are shown in research to be at the lower end of the escalator in figure 2.3.2. What the organisation wants is at the upper end, moving to commitment. This shows a clear mismatch.

Figure 2.3.2: Different communication processes achieve different objectives (Quirke, 1996)



Key success factors associated with change are: active engagement of employees at every organisational level, designing high-impact training and communication strategies as well as high investment in change management

(Corporate Leadership Council, 2001a). Workshops were found as a successful high impact activity, ensuring that all employees received tools and strategies to deal with change. It is evident that communication is an inherent part of many change methods. It is noteworthy to mention a few traditional change methods (Olson and Eoyang, 2001: 134-135): storytelling, goal setting, strategic planning, team building, fishbowl, large group event, organisation design, conflict resolution, building trust, benchmarking and best practices. The effectiveness of these methods will be determined by the change paradigm that is used, like complex adaptive systems.

Degree of involvement and type of message discussed so far are broadly classified as communication settings (Steinberg, 1997: 20-22). The settings, which are not mutually exclusive, are: intrapersonal communication, interpersonal communication, small-group communication, public speaking and mass communication.

The primary source of the post-capitalist society will be knowledge, bringing a shift in classification of workers to two domains namely, knowledge workers and service workers. Attention is focused on staying tuned to the environment, responding quickly to new demands and being able to change direction swiftly. Communication is directed to focus employees' attention on the outside world. Content of the communication will be about markets and customers, levels of customer satisfaction, quality and service. There is a shift away from the use of a limited number of one-way distribution channels: memo's announcements, notice boards to interactive communication channels, such as company meetings, management forums, speak-up lines, video conferencing, satellite broadcasting, electronic mail and conference databases (Quirke, 1996: 23-24, 29).

2.3.1.3 Distortions and Barriers in Communication

Perceptual screens as illustrated in figure 2.3.1 are not the only block to communication, there are a myriad of barriers to effective communication. Communication barriers can include factors such as frame of mind and moods, timing, information overload, unclear semantics, information filtering, unspoken expectations, lack of trust and openness, and gender and cultural differences (Weiss, 2000: 171). Interpretation or the decoding process is the most critical in finding the true meaning of the message, to consider appropriate ways to respond (Dervitsiotis, 2002: 1093). The problem of interpreting the wrong meaning of a message arises from differences in the filters or mental models being used in the act of interpretation.

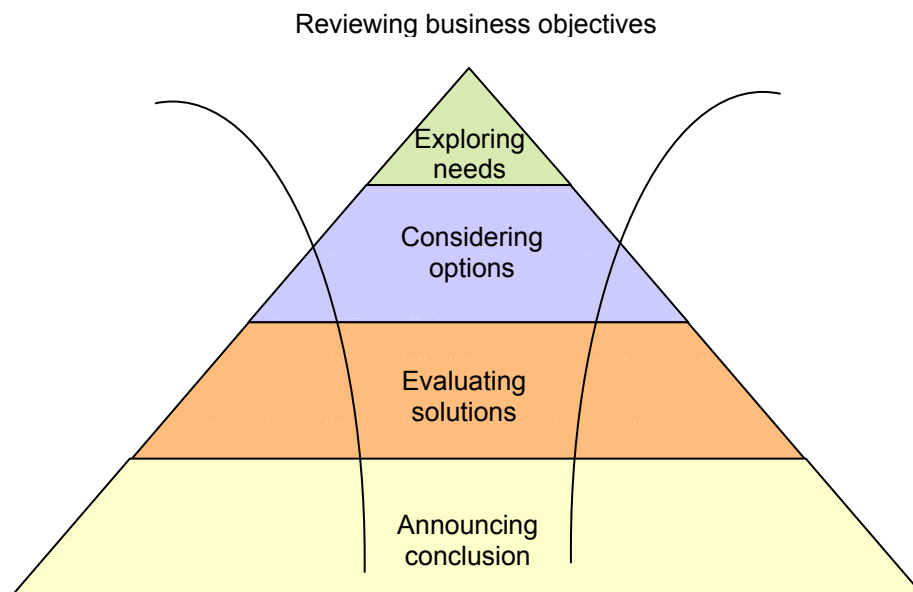
Organisational and personal variables influence both underload and overload of communication, thereby creating communication barriers (Gibson and Hodgetts, 1991: 278-283). Communication load refers to the amount and the complexity of information received by the recipient, these two variables always need to be considered in tandem. Information has been described as that which alters or reinforces understanding, but the opposite effect takes place with information overload. Four qualities of information are associated with information overload, namely low quality, low value, high ambiguity, and an ever decreasing half-life in terms of the currency it carries. The result on an individual level is that information overload lead to managers feeling drowned in a sea of information, also called communication pollution or information anxiety. Complexity-induced overload is also a possibility where uncertainty is increased because of numerosity, diversity and inter-dependence (Sparrow, 1999: 144-145).

Communication efforts must take into account the situation, needs and influences of all potential audiences and utilise various media in order to deliver, exchange and solicit information in a consistent and timely manner (Corporate Leadership Council, 2000b). The four communication pillars: audience, method, content and

timing should be carefully considered in designing a communication strategy and communication activities.

Context is a major factor that needs to be considered as the degree of change increases. People huddle together as the degree of complexity increases. Individual's trust in managers once removed tends to be low, horizons are lower and the focus is more on survival than self-actualisation. This situation becomes a difficult balancing act when the organisation wants to widen employees' horizons and get them to understand more about the business (Quirke, 1996: 92-93, 115 & 118-120). Messages get distorted in multilevel organisations as it travel up and down the ladder of command (Leavitt, 2003: 102). Distortion of information is not only a matter of noise or random error. Self interest may take precedence in making the truth as painless as possible. The dilemma is evident in figure 2.3.3 where funnelling information down the hierarchical pyramid means the greatest number of people gets the least context, and the lower down the organisation you are, the less sense information makes.

Figure 2.3.3: The communication funnel down the hierarchical pyramid, narrowing the focus for a shared context



When communication happens on a narrow front, there is greater danger of the organisation's agenda and the individual's agenda colliding. The process of communication involves taking people through a line of logic. People have to go through this process of thinking to change. The aim should be to share the thinking, not to announce the conclusions. The greater the degree of change, the further up the funnel communication has to focus.

A different view on context is cultural context, where different cultures are more or less receptive to various communication technologies (Corporate Leadership Council, 2002d: 7). The verbal content of a message is more important than the medium in a low context culture, where video conferencing or e-mail is usually accepted as an efficient substitute for an in-person meeting. High value is placed on face-to-face interaction and after-hours socialisation in a high context culture, where meetings and phone calls work best. Relationships are regarded highly in a high context culture, where business transactions are ritualised and the style in which rituals are carried out matters more than the actual words.

2.3.1.4 *Communication Content and Questions*

Effective communication, aligning employee and organisational goals, and an unambiguous definition of the reasons of change was found to be key drivers of success when implementing change successfully (Corporate Leadership Council, 2001c). People need to understand why an organisation is facing a period of change and they must buy into their company's change management efforts. The people implications of upcoming organisational change should be communicated together with what the change will mean for employees' position within the company and how they will be taken care of (Corporate Leadership Council, 2001b). Goals, the nature of change, and implementations steps should be communicated to employees when implementing major cultural change to give employees a sense of purpose. Many change initiatives includes a strategy with a change vision that is communicated. Strategies for addressing employee

concerns during organisational change include explaining business goals and communicating clearly and honestly with employees throughout the process and admitting when unsure of answers (Corporate Leadership Council, 2002c). Continuous communication regarding the company's position and mission during periods of economic uncertainty is essential to ensure that the organisations' constituencies are able to help more effectively and sustain one another.

Vital questions to communicate during a change process are (Corporate Leadership Council, 2001b):

- Why is the change needed? Why is it needed in this way, time and place?
- What processes, structures, goals and standards will change?
- Who should communicate about the change?
- How will the company know if this change has been successful?
- When will key changes occur and when will messages be communicated?

Supervisors can be equipped by following a document that helps them to walk through the steps in communication with employees addressing the questions before, during and after communication (Corporate Leadership Council, 2002a). These questions are indicated in Addendum B, number 1.

Quirke (1996: 26) indicates that each employee should have a clear sense of where he or she fits in and how he or she contributes to the company's goals. People need first to be answered some basic questions before they start wanting answers to wider concerns. The basic questions:

- What is my job?
- How am I doing?
- How secure is my job?
- Where is this taking me?

Wider concerns:

- Where are we going?
- How are we doing?
- How can I help?

Employees need to be told how the change will affect them personally, therefore addressing their personal concerns (Corporate Leadership Council, 2001b). Jack Welch's change blueprint has as a first step the clear expression of the reasons for change. It is necessary to articulate the "why" before getting to the "how" (Corporate Leadership Council, 2003:3).

People need communication at a number of levels, and all levels need to be addressed to create a sense of belonging and pride and excitement:

- Company mission and direction
- Identification with the company, to feel part of a community
- Cross-departmental objectives and familiarity
- Departmental objectives
- Team objectives
- Personal task

It is evident that these different levels are overlapping with stratified systems of cognitive complexity.

There are furthermore two clearly different aspects of communication within an organisation, namely information and relationships (Quirke, 1996: 28). Information in this context is defined by the question: what do I need to know, analyse and interpret? The duality of communication content is described in Hirschorn's (2002: 98) view that campaigning for change includes a marketing campaign that taps into employees' thoughts and feelings, as well as the effective communication of messages about the prospective theme and benefits of change. The following leverage points, ordered in terms of an increase in importance, improvement potential and resistance to change, are proposed interventions (Dervitsiotis, 2002):

Processes affected by information flows:

- Driving positive feedback loops, which speed up a process;
- Information flows, by enriching communication with real-time data; and
- The rules of the system, like incentives, punishment and constraints.

Human communication processes requiring conversations-for-action:

- The power of self-organisation, through making employees as the nodes, stronger and the communication links richer;
- The goal of the system; and
- The mindset or paradigm out of which the goals, rules, and feedback structure arise.

2.3.1.5 Feedback and Effectiveness

Feedback analysis is necessary to provide a framework to improve current feedback loops and patterns of behaviour. Basic characteristics of feedback in a continuous adaptive system include (Olson and Eoyang, 2001: 40-41):

1. Loops that connect across differences in a system;
2. Mediums, like e-mail, phone, meetings and newsletters carry the message;
3. Length of the feedback loop, representing the amount of time between sending a message and receiving a reply;
4. Width of the loop, this is determined by the amount of information that can flow through the loop at the same time; and
5. Dynamic of the loop, which indicates whether it amplifies or dampens current behaviour.

Four stages have been identified in a conversation-for-action loop needed to coordinate the execution of required tasks (Dervitsiotis, 2002):

1. Preparation, where a discussion takes place on the nature of the issue under consideration. This stage is finalised when either the customer makes a request or the supplier makes an offer for a particular action.

2. Negotiation is completed when the customer accepts a promise from the supplier about what will be done and when.
3. Performance is an activity aimed to generate the conditions of satisfaction to fulfil what was agreed on.
4. Assessment of satisfaction takes place when the customer assesses the work submitted by the performer and declares acceptance or non-acceptance.

Organisations have learned that they must overcome obstacles to develop more formalised channels of employee-supervisor communication by: developing measurement tools, measure employee-supervisor communication in reviews, assign accountability, formalise feedback mechanisms, and clarify communication through definitions (Corporate Leadership Council, 2002a).

Questions relating to the effectiveness of information and communication exchanges are (Weiss, 2000: 180):

- What is the information to complete work successfully (routine and critical)?
- What are the sources of information (to receive and transmit), and how fast must it be done? Does organisational structure and technology help this process?
- What is expected to be done with information received and processed, thus where does the person stand in the information flow process?
- What effect does the information handled have on the final value added in the organisation?

A strength of humans is the ability to find patterns in the complexity of the world, but this might cause people to force-fit new information into old models (Schoemaker, 2002: 144-146). Human limitations to monitor include the interdependent use of information, people's tendency to look for confirming

evidence, instead of data for falsifications, as well as the fact that real-world information is often incomplete.

2.3.1.6 Roles in Communication

Employees prefer to receive information from their immediate supervisor. Immediate managers and supervisors are, however, not often in a position to know details regarding future organisational plans and the rationale behind any significant change plans. Executives should balance the decision of:

- who will be delivering the message with the message that should be conveyed;
- when information needs to be communicated with the delivery method, and;
- why the information is important and what the consequences will be (Corporate Leadership Council, 2002c).

Jaques' view on conditions for effective communication includes firstly, that effective communication requires a known and comprehensive communications structure. There is, furthermore, a requirement for a code to govern the relationships between people occupying various roles. Lastly, there is a requirement for a quality of relationships between people immediately connected with each other, so that adaptive segregation can be agreed and stresses worked at, so that segmentation becomes unnecessary (Jaques, 1957: 302 - 306). Adaptive segregation takes place when elected representative are charged with getting on with the job of consultation until constituents demand to make their voices heard. Disruptive failure of communication may be an unconscious but highly motivated type of behaviour intended to obviate stress and discomfort, producing in effect social segmentation. Effective communication in a hierarchical channel, requires freedom from anxiety at the top, and a willingness not only to receive upward communication, but essentially to exert a continuous pull to ensure that subordinates bring crucial problems forward. A social structure, which fits its work task, as well as an effective system of communications, are basic requirements for adaptation and change.

The appointment of a dedicated communications manager is described as good practice, especially if material about the change is to be published outside the organisation or where the media might be involved (Corporate Leadership Council, 2003:1). Training professionals is increasingly used in delivering a change message (Corporate Leadership Council, 2001c). Executives and decision makers may be assisted by training professionals by helping them focus change messages on learning objectives and addressing employee's real concerns about how the change will affect them. An internal communications function can develop general initiatives centrally, but relies on individual communicators to develop messages appropriate for their various audiences (Corporate Leadership Council, 2002e).

2.3.1.7 Change Agent Communication Responsibilities

Communication, a process skill as well as diagnosing, a cognitive skill, are two of the competencies when attempting to influence people. It is evident that elements of the research topic are mentioned as key areas of competence in leaders and managers. Warren Bennis identified management of attention and management of meaning that relate back to communication, and managing of trust relating to consistency in complexity (Carnall, 1999:129).

A change agent is one of the critical roles in the change process. The other major roles are: initiating sponsors, sustaining sponsors, targets and advocates (Costello, 1994: 63).

The change agent is the responsible person for implementing change. Change targets will be the people who must realise or do the changing. It is critical for targets to know what is expected of them, how they can be involved in the planning and implementation, and what support and resources will be available to them (Costello, 1994: 65 & 66).

There are three common structures of the role relationships in change (Costello, 1994: 67):

1. Direct reporting relationship (linear approach);
2. Facilitating relationship (continuous feedback approach); and
3. Advocating relationship (spoken wheel approach)

It is evident that the change agent has different roles, and a shift in these roles occurs through transition of phases in a project. There should be a distinct movement from information gatherers towards a more active training role in the consultant-client relationship. This change in role occurs after the definition phase and the beginning of the evaluation phase, which is the generation of options and solutions, taking the client from selection of evaluation techniques to implementation (McCalman and Paton, 1992: 57&159-160).

Change agents in complex adaptive systems focus on three factors that shape self-organising patterns: the container, significant difference, and transforming exchanges (Olson and Eoyang, 2001: 11, 14, 36-37). Transforming exchanges refers to connections between system agents where messages flow in the form of energy, information or material. The design of transforming exchanges can be influenced by: encouragement of feedback, linking communities of practice, reconfigure networks, and encouraging learning.

The ability to communicate, is one of the skills categories for change agents, given by Sturmer (1993: 99). Communication beyond the formal setting is necessary to persuade others. The right mix of attitudinal, writing and speaking abilities, personal demeanour and professional style is necessary to ensure that the audience absorbs and adopts the message. Adaptiveness and flexibility in complex organisational systems is only enhanced when self-appointed change agents are able to connect their own previous and anticipated actions, to the problems of change, of the resistance that they are seeking to manage or control.

A movement from the observed to observing systems is necessary (Campbell, *et al*, 1994: 31-34).

Guidelines for full participation with the system in times of uncertainty are given by Olson and Eoyang (2001: 61-62):

- An iterative design approach should be used to constantly experiment on the system as a whole;
- Small organisational subunits should be encouraged so that relationships can develop;
- Acting versus analysis paralysis is encouraged;
- Discomfort should be supported by trusting relationships;
- Trust should be build in the concept of solution emergence; and
- Historical adaptation should be used to build models for the future.

Alienation in the workplace is enhanced by a pipeline or media model of communication. The pipeline view sees communication as one-way, self-reflexive and freestanding packages of facts that are sent along to various recipients throughout the organisation, stripping the context from the message. Local contexts, also called local ontology, need to be related to universals through two-way, face-to-face communication reflecting the contexting strengths of the oral tradition. Change leadership becomes more effective when it switches from a focus on the detailing to the management of meaning (Campbell, Coldicott & Kinsella, 1994: 44 & 51-52). Detailing is part of the process in support of the intended changes. Management of meaning is part of the feedback from the ongoing dynamic complexity of the change process itself. Communication as an agent of change is described by Puth (2002: 112). He shows that defining and relating the corporate culture on individual and team basis, is prerequisite for individuals to know new levels of performance required, and how it translates to meaningful work.

Communication is treated as an ongoing process in leading companies (Robbins, 1998: 328-329). Five common activities in which these firms engage are: conveying the rationale underlying decisions, timely provision of information as soon as it becomes available, continuous communication, linking the big picture with the little picture as refraining from dictating how people should feel. Hesselbein (1998 & 1999) includes the employment of the power of language as one of eight milestones organisations pass to reach their destination. Leaders must beam a few clear, consistent messages repeatedly. A few powerful, compelling messages need to be communicated to mobilise people around mission, goals, and values.

2.3.1.8 *Change and Communication in Major Organisational Change*

Any investment in communication activities will have a positive effect on merger integration, considering what is at stake. Effective communication emerged as critical to foster organisational and cultural integration as indicated in five strategies to achieve this goal (Corporate Leadership Council, 2000b). These strategies are described in Addendum B, number 2. Variations in the portfolio of media, which should be used in different phases of communication, are evident in Table 2.3.3.

It was found that technology based communication such as e-mail is invaluable to transcend geographical and temporal boundaries. Paper based media give employees the opportunity to read and digest information in their own time and retaining it for future reference. Response to employees' questions can be provided through help-lines that may be telephonic or via e-mail, posting frequently-asked questions on notice-boards or using intranet based discussion boards.

Table 2.3.3: Informal Phase and Formal Phase of Communication in an M&A

	Informational Phase (Phase 1)	Formational Phase (Phase 2)
Goal:	Communicate time-critical information	Formulate planned programme of activities
Strategy:	Primarily top-down, one-way	Primarily multi-directional
Content focuses on:	Staffing decisions, terms & conditions Organisational hierarchy/structure Business rationale for merger Processes for business change	New common vision and objectives Integration progress, common history Familiarisation and team-building Interim success stories
Tools include:	Broadcast e-mail/voicemail Intranet site postings Memos/internal mailings Newsletters, including "Word" documents. Video broadcasts	Management conferences Brown-bag luncheons Town-hall meetings Q&A hotlines Face-to-face discussions

The negative impact of layoffs can be reduced by companies by taking the following measures for the remaining employee population (Corporate Leadership Council, 2002b & 2001b):

- Ensure that details of the downsizing process are communicated in advance of layoffs and the circumstances regarding who will and who will not be made redundant are expressed honestly.
- Conduct face-to-face meetings or information sessions for employees and managers before and during the downsizing process to allay concerns and ensure adequate communication. Management teams need to acknowledge and legitimise reactions, fears and doubts.
- Executives and leaders who communicate directly with their employees and articulate a strong sense of company loyalty help to limit damaging effects of downsizing on employee commitment and morale.

Communication is seen as a crucial tactic for employers in companies that are downsizing. Communication stems the flow of rumours. Line managers need to be trained to listen to employees' concerns and pass information up the line (Corporate Leadership Council, 2002c). Companies that have to communicate bad news to employees have to prepare well in advance to alert employees as soon as possible so that employees will hear this negative information personally from their managers (Corporate Leadership Council, 2001b). Straightforward and timely internal communication, even when unfavourable, will ease fears and doubts of employees, as employees seek honest answers from management.

2.3.1.8.1 Restructuring and Downsizing

Companies, which have been studied, take the following steps to communicate with employees who remain with the company after an organisational restructuring (Corporate Leadership Council, 2002c):

- Informal sessions between management and small groups;
- Message boards in the restrooms of lunchroom;
- Department visits by top managers;
- Electronic displays of announcements and updates;
- Chat sessions on the organisation's intranet; and
- Hotlines for employees' questions and concerns.

2.3.1.8.2 Technological Change

An improvisational model of technological change is based on the principle of open-ended information technologies that change iteratively, that may be unpredictable at the start, evolving from practical experience (Corporate Leadership Council, 2003:4). Three types of change build on each other from anticipated, to emergent, to opportunity –based over time. Communication and information distribution will consequently change according to the types of technological change.

2.3.2 People and their Needs in Change

Change is related to hope, as well as fear, in the mind of human beings (Plattner, 2004: 24). The uncertainty factor in change turns it into a threat. It even raises anxiety levels in those managing change. Caudron (2003: 24) explains that cryptic messages from management might open a black hole of fear in the absence of real information. She equates it to Einstein's $E=MC^2$, meaning expectations are driven by management communication, or the lack thereof.

People's needs, determined by their inherent cognitive complexity, are the variable to be determined by this research. There is, however, existing theories of needs, like the hierarchy of needs described by Abraham Maslow and hidden needs identified by Vance Packard (Steinberg, 1997: 27). People's needs shaped by the context of change should be highlighted, as this will colour research findings.

Stamp and Jaques have adopted the view that people do not react to an objective real world. People actively construct a view of the world that becomes the world in which they live and work. It is, therefore, evident that people react to the meaning they have attached to that world. Attention is, therefore, given to what people see through their conceptual capacity (Stamp, 2002: 55). Work is seen as the activity by means of which reality is most fundamentally tested, thus reinforcing sanity and keeping it under review (Jaques, 1986: 17). Jaques comes to a conclusion that emotional make-up, as well as intelligence, must enter in the view of the ability to tolerate uncertainty. A link is made between Melanie Klein's observations of tolerating increasingly long periods to wait for an outcome, meaning the capacity to put off the pleasure principal and emotional make-up (Jaques, 1972: 91).

Social capital, the extendant to social cohesion, linked to shared values and common commitment, seems to be realised as a crucial determinant of success,

realising cohesion networks where isolation is a threat. A change in concern from vertical control and co-ordination to vertical value-add creates circumstances where trust is essential. Trust is evidently a key element in the virtual organisation where networks provide the means through which increased complexity is dealt with (Carnall, 1999: 22-23). It is evident that trust is a key element in building social capital. Anti-requisite institutions are entropic, where suspicion and mistrust undermine collaborative interaction and work, thereby weakening social bonds, spreading alienation and social insecurity. Secondary effects may result in stimulation of primary irrational and pathological roots of anxiety at the unconscious level as pointed out by Melanie Klein, distorting judgements people make about motives and behaviour of others (Jacques, 1986: 7-8).

2.3.2.1 *Impact of Change on People*

It is evident that people are intertwined in change. Leider (1994: 3) states that individuals have to deal with three changing environments. There are firstly waves of change sweeping across the globe and individuals must learn to interpret it accurately. Then there is the organisational environment, which is changing, and people respond to it differently than a few years ago. Thirdly, there is an impact on the individual's life with ripple effects on the relationship between individuals, organisations and families. MacCalman and Robert (1992:7) explain that a manager has to deal with constant change internally, externally as well as from a proactive set of viewpoints. There are on the individual level three conditions required for change (Simpkins, 2003: 2):

- Readiness, including the dimensions of physical, emotional, intellectual, psychological and spiritual;
- Willingness in choice and desire for the change. People can only be coerced into compliance, which is not the same as change; and
- Able, meaning people must have or acquire the ability, resources, skills and awareness of change methods or get the assistance required to make and sustain the change.

People react differently towards change, Leider (1994: 127-128) refers to risk styles, associated with locus of control. People with an external locus of control will avoid, idealise and normalise. Internal locus of controllers will be associated with inventurers and discoverers. These expressions of the self, fall on a continuum. Expressions will have an influence on the orientation people have towards the unknown, meaning what information will suffice to their needs. People and groups in a system may seem independent in perception, experience and adaptation to change, but all function interdependently. There are evidently ramifications on varying levels during change (Gowing et al, 1999: 116). People are generally willing and able to deal with change when they know it is necessary (McCalman *et al*, 1992:8). One of the greatest motivators for change is pain (French & Bell, 1999: 122). Creating readiness for change is done by sensitising people about the pressures for change, showing discrepancies between the current state of affairs and the future and communicating positive, realistic expectations for the advantages of the change.

Change is actually driven by two dimensions, the business dimension and the people dimension (Corporate Leadership Council, 2003:4). Successful change happens when both dimensions of change occur at the same time. Transition happens much slower than change because it requires that people undergo three separate processes, which are upsetting (Bridges & Mitchell, 2000). The processes are:

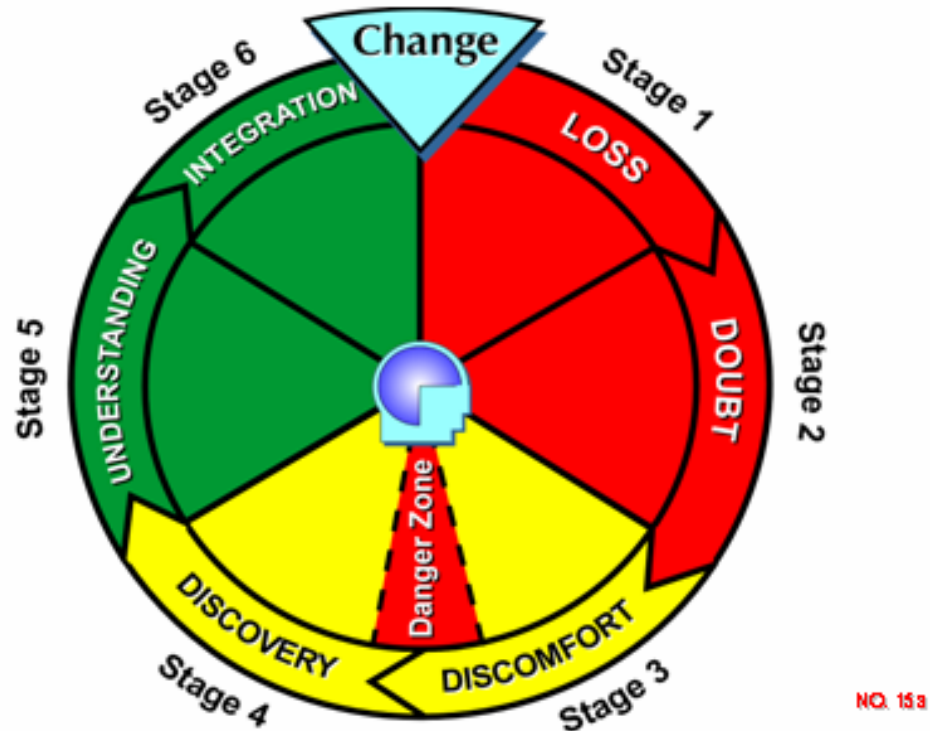
- Saying goodbye, where people are asked to let go of what feels to them like their world of experience, their sense of identity, even reality itself.
- Shifting into neutral, this is uncomfortable, creating a drive in people to get out of it. Some people rush ahead, while others try to back-pedal and retreat into the past.
- Moving forward, but behaving in a new way can be disconcerting, putting people's sense of competence and value at risk.

Individual reactions to change are compared to a situation of loss and pain and can be described using a series of stages as initially stated by Kubler-Ross (Weiss, 2000: 412): denial, anger, depression, bargaining and acceptance. Any change produces a degree of stress or trauma in that it requires an adaptation. Even a positive event brings its own kind of stress, requiring adjustments and shifts in behaviour, responses, attitudes or responsibilities (Simpkins, 2003: 108). Change is a threat to the whole spectrum of employees in the organisation, with different consequences for individuals (Puth, 2002: 111-112). First-line supervisors might be concerned about elimination of their positions with broader participation. Top-level leaders need to go through hardships of reorganisations and restructuring, facing the new business environment. The worker-leadership partnership in communication must be built on solid, factual understanding of the company's position where job security is a major factor stemming from changes. A team approach, rather than an individual approach, in planning and implementation of change is necessary, as this resembles natural working groups in organisations. Middle managers are expected to translate decisions made by top management into action and representing it downwards, although they may often be excluded from consultation and decisions. Investment in interpersonal skills of middle managers is advised before sending them to workshops and seminars on change management (Plattner, 2004: 25).

2.3.2.1.1 Change as a Cycle

The model in figure 2.3.4 is depicted as a circle to show the continuous and cyclical nature of change in people's lives. When a challenge or desire enters a person's life, the Change Cycle begins. Because all changes affect people at the emotional, behavioural and cognitive levels, understanding feelings, thoughts and behaviours becomes a vital tool in assisting people to take personal responsibility for the change they face (Sasol, 2003:31-33).

Figure 2.3.4: Change Cycle



The model above represents the six stages people will pass through if they chose to deal completely with any change. The six stages are described in Addendum B, number 3.

2.3.2.1.2 Stages of Change and Transition

Change communication needs to be considered differently in different stages of transition described by various authors (Weiss, 2000: 412&414, Carnall, 1999: 210-214 and Gowing at al, 1999: 196-198):

- Shock (denial): Identify common ground, build support networks and give information repeatedly. Visible support and safety (clear expectations, reward systems, resources and support) is necessary. Immediate impact of change needs to be minimised to build group cohesion.
- Defensive retreat (resistance): This behaviour has the effect of creating time and space to come to terms with the changes. People need to be awakened to recognize that change is not painless, easy and instant.

Help people to identify what to hold on to and what as well as how to let go in the new situation. Information needs to be given continually and consistently. Resistance is about loss, people need to mourn. Workers need to be given a chance to express their feelings and understand where they will stand in the new order. New expectations have to be explained, as well as options and choices which employees have, need to be provided.

- Acknowledgement (exploration and discarding): Involve people in exploring options and planning through a decision making process. The pressure of formal training needs to be removed. It needs to be emphasised that everyone is learning.
- Adaptation and Change (commitment): Implement plans. Encourage and support risk taking using support and structures developed in stage 3. Establish feedback loops for information flow in all directions.
- Internalisation

Puth (2002: 124-130) describes different individual reactions to change, rather than stages as above. Communication according to the four different reactions to change is as follow:

2.3.2.1.2.1 Disengagement (withdrawal)

These people need to be confronted with their change in behaviour, thereby trying to draw them out and identifying issues to be addressed.

2.3.2.1.2.2 Disidentification (sadness and worry)

Assist in individual exploration by separating employee's emotions from the issue that they previously identified with, especially using questions. A transfer process needs to follow where the ideas need to be anchored in concrete definable steps.

2.3.2.1.2.3 Disorientation (confusion)

Explain by providing information that fits into a framework or a broader context of goals or a vision, from there on a series of steps, direction or a strategy needs to be established.

2.3.2.1.2.4 Disenchantment (anger)

Neutralise by providing an opportunity to vent anger in a safe environment. Acknowledge anger is normal and understandable.

2.3.2.2 *Managing Resistance*

Robbins (1998: 632) indicates that one of the most well documented findings from studies of organisational and individual behaviour is that organisations and their members resist change. Change, a new beginning, is often not seen as an opportunity, but as a threat. Anxiety, uncertainty and other negative feelings in change often come from a lack of reliable information about the future (Gowing *et al*, 1999: 46). Common reasons for resisting change include that organisations do not communicate expectations clearly and that organisations have poor internal communication (Corporate leadership Council, 2001c). Anxiety is caused by unknowns. People have a need for a degree of stability or security. People typically develop patterns for coping with the current structure or situation (Mabey *et al*, 1993: 90). Imposed change reduces a sense of self-control and autonomy. Leider (1994: 3) states that trying to stop the growth process is to succumb to “inner kill”, it is self-induced death without knowing it.

There are sometimes other underlying features to what is often seen as resistance. It is most possibly a lack of critical mass, commitment, learning, energy or enthusiasm (Stickland, 1998: 138).

Resistance to change is seen in basic human characteristics such as the need for security, and selective information processing (Robbins, 1998: 633). Gibson and Hodgetts (1991: 333-334), provide an extended list of reasons for resistance:

employees have a vested interest in the status quo, tradition, fear of increased responsibility, low propensity for risk and resistance to technology. Habit, concern for economic losses and the fear of the unknown are mentioned by Robbins and the latter authors. Employees with a stake in the status quo or employees disenfranchised from the change process, are the two greatest sources of resistance to change (Corporate Leadership Council, 2001a). Companies that were successful at dealing with resistance communicated candidly and actively engaged employees. Employee concerns can be reduced by management teams who acknowledge and legitimise feelings and address them through face-to-face meetings, rather than withholding information or not acknowledging employee reactions, fears and doubts (Corporate Leadership Council, 2002c).

Three fears: failure, the loss of the familiar and the unknown are caused by the following factors (Weiss, 2000: 411-415):

- Personality conflicts;
- Disruption of relationships; and
- Disruption of cultural traditions and group norms.

Broader classification of types of resistance can help in focusing with a balanced perspective in addressing resistance. Three types of resistances to address are logical, rational objections, secondly psychological, emotional attitudes and thirdly sociological factors and group interests (Gibson and Hodgetts, 1991: 335). Overcoming resistance to change is achieved through three methods (French & Bell, 1999: 122): dealing empathetically with feelings of loss and anxiety, providing extensive communication about the change effort and how it is proceeding, and encouraging participation by organisation members in planning and executing the change.

One of six tactics in dealing with resistance to change is education and communication (Robins, 1998: 636). The premise of this tactic is that resistance

to change lies in misinformation or poor communication. Thus, if the logic is seen, then resistance will subside. The prerequisite for the effectiveness for this tactic is that the source of the resistance is inadequate communication and that management-employee relations are characterised by mutual trust and credibility. Tactics which proved effective in affecting change while maintaining a positive company culture involved communicating business issues such as financial data and strategic decisions to employees and educating employees through courses on change management (Corporate Leadership Council, 2002c). Ancillary tactics to the latter are communication through newsletters, expressing the companies' intentions of the change and conducting meetings with management and individual or small group of employees to discuss change.

Communication is at the lower end of salience or potency of approach in Kotter and Schlesinger's contingency approach for overcoming resistance to change (King and Anderson, 2002: 201-203). Potential communication methods include:

- provision of information on the change
- presenting a rationale for the proposals, educate employees of the benefit to allay fears
- challenging misrepresentations of the change process.

Communication is the preferred approach, but it may be necessary to utilise more potent techniques like increasing from participation, facilitation, negotiation, manipulation, to coercion where deeply rooted resistance is prevalent.

Leider (1994: 43) referring to Thom Peters and Robert Waterman's book, *In Search of Excellence*, state that real commitment does not come through autocratic power, but through the power of purpose. This viewpoint is supported on well-researched theory of purpose. Frankl indicated that people are unlikely to get happiness if they pursue it directly, they need purposeful goals. There needs to be a linkage between the organisation's and the individual's goal to create inspired purposefulness. People can consciously assume responsibility for an organisation's success if they are able to identify with the organisation.

When focusing on a broader level, there was the following evidence in change efforts that did not work (Carnall, 1999:90):

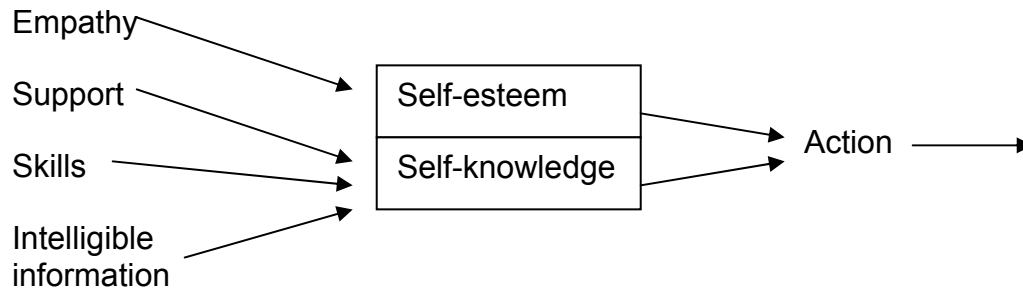
- Rigid rules and procedures
- Customer needs not understood by managers
- Lack of commitment or skill in managers handling change
- Inter-group problems
- Poor communication
- Lack of strategic thinking
- Belief that declining revenue was temporary
- Low levels of trust

It is notable that many of the factors above show a relation to stratified systems theory.

Support for change is, according to Ken Hultman (1998: 5), the opposite of resistance. Eight reasons why people support change are that they believe that:

- Their needs are not currently being met.
- Change will make it easier for them to meet their needs.
- The benefits outweigh the risk.
- Change is necessary to avoid or escape a harmful situation.
- The change process is being handled properly.
- Change will work.
- Change is consistent with their values.
- Those responsible for the change can be trusted.

Demands are placed on individuals who need to cope with change. Self-esteem seems to stand central to coping with change. Figure 2.3.5 illustrates that information is a key component in coping with change (Carnall, 1999: 206-207).

Figure 2.3.5: Rebuilding self-esteem

Even empathy involves the ability to understand how people construct reality. This involves the perception and discovery in people's inner and outer worlds. There is evidence that information needs to be made intelligible for the intended recipients. Self-confidence and self-esteem are keys to successful change management for both managers and employees (Plattner, 2004: 25). A compassionate approach to communicating corporate change to individuals negatively effected will show an understanding that the employee has suffered a sudden and intense loss of self esteem, and it will furthermore influence the morale of survivors observing how departing co-workers are treated (Corporate Leadership Council, 2001b).

Carnall (1999: 214-219) proposes an individual framework for individuals to cope with change. Rebuilding self-esteem stands central in the categories, first focusing on personal mastery questions, and then situational factors related to change for which intelligible information is needed. The final category relates to support networks and dealing with people, this brings to mind Covey's interdependence.

Hultman (1998: 176-191) proposes a generic resistance strategy model when dealing with planned change. Definition of change is the first step, it has to be concrete and complete as possible with sequence and timing of change. It is secondly important to determine the intensity, source, and focus of possible resistance. Factors to consider include change opinion, which are: beliefs,

psychological needs, facts, values and trust. Step three will include development of a strategy. Formulation of alternative strategies will increase the quality of effective strategies. Methods for overcoming resistance may include verification of facts to deal with thinking, clarification of beliefs and challenging unviable beliefs. Implementing the strategy is the fourth step, where the most important factors are timing and pacing. Step five includes evaluation of the results of the strategy and step six closes the loop by repeating steps two through five as required.

Communication is used to overcome resistance and feelings of disenchantment or betrayal (Corporate Leadership Council, 2000a). Employees need to be told why the company is changing by means of goal for change with a roadmap. Information needs to be personalised, thereby describing to employees how they fit into the overall picture. An appearance of transparency needs to be created, this is emphasised by avoiding hiding information.

2.3.2.3 Power and political dynamics

Changes bring instability, upheaval and uncertainty, bringing about new patterns of power, influence and control. Power and politics reach their highest pitch during the transition state. Three characteristics are always involved in change, namely, instability, uncertainty and stress that lead to three problems that must be resolved and managed: power, anxiety and control. Responses to shape the political dynamics of change include: the building of support of key power groups, using leader behaviour to generate support, using symbols and language deliberately and define points of stability (French & Bell, 1999: 298-299). The behaviour of key and powerful leaders is a major factor affecting the political terrain. Leadership behaviour needs to be used to generate energy in support of change. Key stakeholders and power-groups need to be identified and strategies have to build around these groups. Elements to be used to build power centres are: to use symbols and language to create energy, as well as building stability on aspects that will not change during transition (Mabey *et al*, 1993: 95-96).

Three dominant power groups within an enterprise are the members of the association which employs the bureaucracy, the customers of the goods and services produced by the system as well as employees. Jacques (1986: 195-197) states that there must be unanimous acceptance by all significant power groups of any differentials in conditions between them.

Existing ways about what people do can be overturned with any significant organisational change. New ideas that seem unorthodox are subject to political processes (Carnall, 1999: 205).

2.3.2.4 *Involvement*

Participation is closely associated with experiences of belonging and alienation. The lack of the right to participate builds suspicion and mistrust, regardless of the personal motives and integrity of the individuals involved (Jacques, 1986: 191). Work involvement has a statistically significant relationship with career resilience (De Klerk, 2001: 234-237). Complexity of changes and the strength of linkage between different parts of the changes is a determining factor to decide on involvement of people (Carnall, 1999: 222).

Involvement, as well as communication is seen as techniques to prevent, reduce and manage resistance. Other techniques to manage resistance include: gradual implementation, commitment, leadership, empowerment, reward, resources, utilisation and acknowledgement of supporters, avoidance of the we/they syndrome and promotion of risk taking. It is evident that specific, rather than general solutions may be required for specific individuals (Costello, 1994: 95-96).

Human (1998: 46-47) indicates that social and cultural transformation results from a long process of interaction between people and their leaders.

Transformation is furthermore of no value unless it involves transformation of the mind.

There are three characteristics necessary for effective change and those involved in it (Carnall, 1999: 225-228):

- Awareness: Understanding and credibility are vital factors. People develop confidence for success by being energised to act appropriately.
- Capability (empowering – I can, I can cope): People need to be confident that they will cope in the new situation.
- Will (inclusion): Those involved need to value the new objectives and choose it, thereby being committed.

It is noteworthy that the process of change as described by Carnall starts with individual understanding, focusing on the cognitive component, which is the gate where ideas are converted to intentions together with the declaration to others.

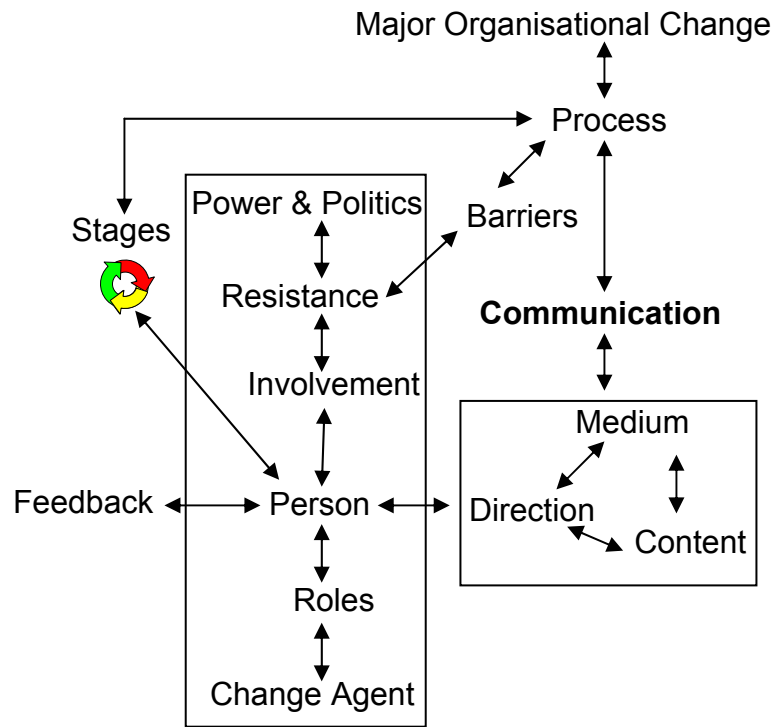
MacCalman and Robert (1992: 88) consider five factors to help people accept change, showing similarities to Carnall's points above. The factors that should be taken into account are involvement, communication, perceptions, resource and schedule. The ADKAR model (Corporate Leadership Council, 2003:4), a tool developed commercially to assist managers in supporting their staff through a change process, requires managing five key phrases:

- Awareness of the need to change
- Desire to participate and support the change
- Knowledge of how to change
- Ability to implement the change on a day-to-day basis
- Reinforcement to keep the change in place

2.3.3 Conclusion

This section described the individual as a dynamic part in provision of information. Communication captures the dynamic nature of information exchange and individuals. Key elements related to communication in this section are illustrated in Figure 2.3.6.

Figure 2.3.6: Communication in context of the research topic



People issues, feature prominently in the dynamics of communication as highlighted in the left block in the figure. Information needs, can mainly be found in the stages of change and interpersonal dynamics as reflected in the people issues. Information and communication aspects can be seen on the right of people issues in Figure 2.3.6. A dynamic interplay between people and their needs for information, with the provision of information, is evidently part of the nature of communication.

Chapter 3

Research Methodology

3.1 Research Strategy

The purpose of this study is to determine building blocks for information distribution during change, based on people's cognitive complexity. This will consequently define the approach to the research methodology.

3.1.1 Sub-problems and sub-goals

Fouché (De Vos et al, 2002: 119) stated that qualitative methods usually do not have a precisely delimited problem statement or precise hypothesis. Possible guiding hypothesis that will be tools to generate questions and to search for patterns are:

- Information needs will be linked to descriptors of each strata of cognitive complexity. Elements included in this are:
 - Time-spans, this may be periods before outcomes of change are expected.
 - Structural descriptors of change, including area of impact
 - Parties involved and the view of their role
 - Uncertainties tolerated
- Communication mediums and formats relating to certain people's ability to process certain information easier than others

Steinberg (1997: 138) highlights that it has been suggested that respondents in research studies infer the needs they seek to satisfy from questions asked about their use of media. This statement is important when looking at research methodology.

Exploratory research addresses the "what" question (Neuman, 2003: 30). In this context: "What is the information needs?"

3.1.2 Logical connections between the research question, the research goal and objective, and the methods selected.

It would be ideal to compile a questionnaire with possible scenarios of information available during change. There is one major disadvantage in this approach: when you present information, you already create expectations, which might not be present. The second disadvantage with a quantitative or very structured approach is that meaningful information and clarification can get lost in the research process.

The method of investigation will be exploratory, qualitative. The reason is that this method is less wedded to a specific theory or specific research question. A well-grounded mental picture is necessary to identify what is occurring regarding people's needs for information during change. Neuman (2003: 30) states that qualitative research tends to be more open, using a range of evidence and discovering new issues, thereby opening up possibilities for a model. Qualitative research is described by Strauss and Corbin (1998: 10-11) as any type of research that produces findings, not arrived by statistical procedures or other means of quantification, but where the analysis is interpretative.

Merleau-Ponty's description in phenomenology put the methodology of this research in the following context: "Empiricism cannot see that we need to know what we are looking for, otherwise we would not be looking for it, and intellectualism fails to see that we need to be ignorant of what we are looking for, or equally again we should not be searching. They are in agreement in that neither attaches due importance to that circumscribed ignorance, that still 'empty' but already determinate intention which is attention itself" (Jacques, 1986: 101-102).

The research goal of determining how cognitive complexity influence people's need for information during change, points to the attempt to find theory which is

not in existence on the topic of investigation. The underlying movement in this research is to build theory, finding building blocks for distributing information on change based on cognitive complexity. Grounded theory is derived from data that are systematically gathered and analysed through the research process. A researcher in this approach does not begin an investigation with a list of preconceived concepts, a guiding theoretical framework, or a well thought out design, unless where elaboration and extension is necessary on existing theory. Emergence is a foundation to theory building (Strauss and Corbin, 1998: 12 & 34).

3.1.3 Key variables/Main constructs of the problem

There are not predetermined variables in theory building methodology, but the following serves as a framework to clarify how the areas in the research question will be approached.

3.1.3.1 Cognitive complexity (Independent Variable)

Cognitive complexity is a concept based on Stratified Systems Theory or Requisite Organisation, originally developed by Elliott Jaques. The theory was developed from time-span of discretion (TSD). The time-horizon is the longest time-span a person could handle in some kind of work. The time-horizon is the measure of the level of a person's information processing complexity, the raw native ability, to match the level of complexity of the role, measured in time-span (Jaques, 2002: 81-83).

Candidates in focus groups will be selected according to their cognitive complexity based on prior identification through assessment instruments, namely the Initial Recruitment Interview Schedule (IRIS) as well as the Career Path Appreciation (CPA). The selection information will be available from a database in the company where the research will be conducted. Candidates with similar cognitive complexity profiles will be grouped into focus groups with corresponding individual profiles.

3.1.3.2 *Needs for information (Dependent Variable)*

This is specifically, individually based, needs for information. It is the dependent variable, which need to be defined in the research, using focus groups.

3.1.3.3 *Field of study*

Stratified Systems Theory span a broad field of studies, Craddock (2002b: 282) identified eleven broad academic classifications ranging from management sciences to industrial engineering, and that is only for Ph.D.s completed on the theory. This specific study will be in management and psychology with a focus on change management, which is a category of organisational development.

3.2 Pre-Measurement: Initial Recruitment Interview Schedule (IRIS) and Career Path Appreciation (CPA)

This section describes the pre-measurement, which will be obtained from a database, indicating how the CPA and IRIS are used to measure cognitive complexity. Reasons for using data obtained from both instrument will be clarified by the indication that both the CPA and IRIS measure current capability as well as projections of future capability.

3.2.1 Development and principles of the CPA

Gillian Stamp developed a tool for the measurement of capability in 1978, which she labelled: Career Path Appreciation. The CPA was spreading fast during the mid-eighties with specific application at Maccauvlei Training and Conference Centre in South Africa, but it also came into use around the world, in countries like Australia and North America (Bioss SA, 2002: 4 & Stamp, 2002: 50).

The CPA procedure is a collaborative process between the CPA practitioner and the individual to establish how matched the person is to his/her current level of work and, given their age, to make a prediction of future growth (Hobrough, 1992: 6). CPA can be described as a guided conversation to determine how a

person exercises discretion, thereby coping with complexity (Stamp, 2002: 47 & 50). The process involves a structured interview, which explores people's current working worlds, a short problem solving task to identify individual thinking styles and a review of career history up to date. Nine sets of phrase cards are used as triggers in the guided conversation about the way the person constructs their frames of reference and approaches their work. Evidence is used to provide triggers for a guided conversation between the candidate and a trained counsellor. Material from the three parts of the appreciation is interpreted with the model of complexity in work and individual decision-making capability in mind (Bioss, 2000: 23).

Two major elements in the CPA measure, developed from two perspectives. There was firstly a series of three symbol cards derived from Jerome Bruner. The cards were used by John Isaac, a lecturer in physics for purely statistical purposes. Gillian saw in this a microcosm of the work situation with the minimum of instruction and maximum uncertainty, to work towards a pattern. It was later realised by Gillian that she was picking up the general way people gather, sort out and engage with information as a prelude to decision making, now known as preferred style or approach (Bioss SA, 2002: 3).

The concept of mode, appeared in the late seventies when Ian McDonald started to think that people will grow in capability. This was supplemented by work from Tom Kohler in the United States. Gillian Stamp began to realise from having done many appreciations that people used very similar phrases during their talks on their career histories (BIOSS SA, 2002: 4). Gillian refined the phrases into a number of cards to test the best triggers. Cards are used to elicit comments that are content analysed by the counsellor in the feedback session. The process can be described as a clinical, projective procedure (Stamp, 2002: 50).

3.2.2 Development and principles of the IRIS

Dr Sheila Rossan, at BLOSS (Brunel Institute of Organisation and Social Studies), developed the IRIS. This instrument is build on the same theoretical basis as the Career Path Appreciation (CPA), used to identify potential to handle the kinds of decision making in different managerial levels (Ashton, 2000: 1). IRIS was designed to facilitate the identification of people who would meet the current and future needs of the organisation. The process can be used in the identification of candidates who would be most likely be able to handle the varying complexity of decision-making necessary for first-line, middle and senior managers (Mauer, 2000: 1).

The IRIS is a semi-structured, one-to-one interview with an approximate duration of 35 - 60 minutes. A highly trained practitioner arrives at an assessment of a person's capabilities using a standardised scoring procedure. Scoring is done against nine dimensions of levels of work including time-span, environment, degree of restraint and autonomy, degree of uncertainty, complexity of decisions, nature and theme of tasks. The IRIS provides a score of an individual's current level of capability and a projected score for five, ten and fifteen years into the future in terms of levels of work (Percival, 2004 & Ashton, 2000: 1 & 28).

3.2.3 Overview of research on the CPA and IRIS

A study by Noble (2004) demonstrated a significant positive relationship between the two sets of results of the CPA and IRIS, which supports the validity of the two instruments. There is specifically a significant association between the current level of capability as well as the future levels of capability as identified by the CPA and the IRIS. It is, furthermore, justified to use the CPA and IRIS interchangeably within organisations and between different individuals, provided the matrix of work model is applied correctly in the scoring of both assessments. Effective comparisons are consequently possible between the two instruments. The IRIS and CPA can be considered as culture and gender fair and furthermore

reliable and valid (Percival, 2004; Noble, 2004; Stamp, 2000: 57 - 58 & Mauer, 2000).

A business unit of a South African company, where the research will be conducted, started using the IRIS and CPA as assessment tools to chart the talent pool, giving guidance on succession and career management. There is consequently data available on the cognitive complexity part of the hypothesis concerning the correlation between information needs in change and cognitive complexity.

3.3 Research Process

3.3.1 Focus Groups

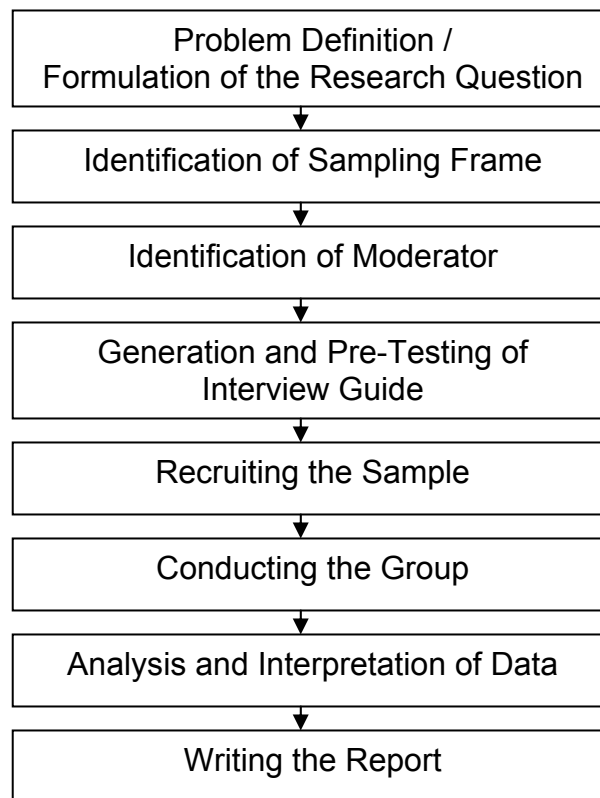
3.3.1.1 General Theory of Focus Groups

There are two principal means of collecting qualitative data in social sciences, namely participant observations, which typically occur in groups, as well as open-ended interviews that mainly involve individuals. Participant observations have the strength of naturalistic observations, but there is a comparative weakness to focus groups in locating and gaining access to settings in which a substantial set of observations can be collected on the topic of interest. Group discussions, compared to individual interviews, provide evidence about similarities and differences in the participant's opinions and experiences. Individual interviews, however, have the advantage over focus groups with regard to the amount of control the interviewer has and the amount of information that each informant have to share. The ability of a focus group to take control and direction of the interview is especially useful in exploratory research. One answer on the dilemma of utilising individual interviews versus group discussion is given by Morgan by noting that an interest in group behaviour might not be served by data from individual interviews, but most research does not involve topics that can be

neatly divided into purely individual or purely group behaviour (Morgan, 1997: 7, 9-13).

Morgan (1997: 20 - 21) states that a common summary of self-contained focus groups is to learn about participants' attitudes and opinions on the researcher's topic of interest, but going beyond it to experiences and perspectives, provides useful data based on behaviour. Perspectives provide a broader basis that includes attitudes, opinions and experiences in an effort to find out not only what people think about an issue, but also how they think about it and why they think the way they do. The process of sharing and comparing among participants is one of the most valuable aspects of self-contained focus groups as the search for connections among different experiences is exactly what researchers do.

Figure 3.1: Steps in the Design and Use of Focus Groups (Steward & Shamdasani, 1990: 20)



The use of focus groups in the figure above is compared to other types of research where it is designed to focus on a specific research problem. The research question is the source of specific questions that need to be raised by the moderator and it identifies the population of interest (Steward *et al*, 1990: 18). More detailed descriptions of the steps in Figure 3.1 will be provided further on in this chapter.

3.3.1.1.1 Strengths of Focus Groups

The ability to produce concentrated amounts of data on precisely the topic of interest is a strength which relies on the researcher's focus. Working with focus groups will clearly be more effective, given the amount of time to conduct and analyse the interviews compared to individual interviews. The interactions and comparisons of the group to produce data on experiences and opinions are a valuable source of insight into complex behaviours and motivations (Morgan, 1997: 13-15). Deeper levels of meaning can be uncovered, making important connections and identifying subtle nuances in expression and meaning. Data is provided from a group of people in a quicker and more cost effective way than separate interviews. Steward & Shamdasani (1990: 16 & 19) indicated that there are respondent interaction advantages of focus groups relative to individual interviews, which include synergism, snowballing, stimulation, security and spontaneity.

3.3.1.1.2 Weaknesses of Focus Groups

Logistical factors that would negatively influence conducting focus groups include: travelling of participants to focus groups and assembling enough of the right people for the group. There is a concern that the moderator will influence the group's interactions in the name of maintaining the interview's focus, this is however not unique in social sciences. The group itself may furthermore influence the data it produces by tending to conform (Morgan, 1997: 14-15). The small number of respondents limits the generalisation to a larger population (Steward & Shamdasani, 1990: 17).

3.3.1.2 Focus Groups in the Research Design

Individual interviews will unfortunately be time-consuming, not focusing on a more representative group from different strata of cognitive complexity. Focus groups will be used, due to its hallmark of explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group (Morgan, 1997: 2). The groups will consist of people already measured with the IRIS or CPA in the company where the study takes place. Attention will not be on statistical sampling, as the thrust of this study is to expand an emerging theoretical framework (De Vos *et al*, 2002: 335).

Focus group interviews are a group information collection method, seen as meaningful to explore thoughts and feelings. A focus group is described as a carefully planned discussion, designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment. The environment needs to be comfortable and free from noise. The participants will have certain characteristics in common, primarily their prior measured cognitive complexity. The usefulness of focus groups is ideal for the research topic to obtain multiple viewpoints and responses in a relative shorter time span than individual interviews. Focus groups are seen as a powerful means of exposing reality and of investigating complex behaviour and motivation. Focus groups will be used to understand differences between groups or categories of people. It will definitely contribute to the question of how a broad classification of people's complex thought patterns influence information needs in change (De Vos *et al*, 2002: 291 & 305-307 and Struwig, 2001:99-100).

3.3.2 Project Planning and Implementation

Morgan (1997: 33 - 34) states that the timeframe of a project can take from three to six months or longer, depending on the number of groups, the availability of participants, and the kind of analysis needed for the transcripts. General rules of thumb will be used as guidelines regarding focus groups in the project, which

include firstly homogenous strangers as participants in terms of cognitive complexity, secondly relying on a relatively structured interview with high moderator involvement, thirdly having four to eight participants per group and fourthly having a total of three to five groups.

3.3.2.1 Sampling method

Purposive sampling, a non-probability sampling method will be used. This is a frequently used method where participants are recruited from a limited number of sources (Morgan, 1997: 35 and Steward, *et al*, 1990: 53). Important aspects to consider regarding this method are the parameters of the population as well as the criteria for the selection of respondents (De Vos, *et al*, 2002: 334). This sampling technique is used to select members of a difficult-to-reach population (Neuman, 2003: 213), which is the case in this study. There are a limited number of people assessed in the company that is part of the target population, they are furthermore geographically dispersed.

3.3.2.2 Population and Sample size

The population is people of whom the current and future levels of complexity in cognitive functioning have been determined. There are people already measured with the IRIS or CPA in the company where the population is situated.

People will be categorised for each focus group according to their level of cognitive complexity. This will create homogeneity. Segmentation takes place by choosing the group composition to match carefully chosen categories of participants. The homogeneity of the groups will firstly create the benefit of free flowing conversation, but most importantly facilitating the analysis of differences in perspective between groups. Recruiting acquaintances will be unavoidable in the organisational context, but the topic of discussion will be such that participants can talk about it comfortably (Morgan, 1997: 35, 38). Choosing a group consisting of five people follows the guideline for smaller groups (De Vos *et al*, 2002: 312-313). The general composition of focus groups range from four

to ten participants who are homogeneous in some respect. Morgan warns that a group less than six may cause difficulties in sustaining discussion, but it is possible to hold discussion with few people where high involvement is possible (Struwig, 2001: 99 and Morgan, 1997: 43). Detail is necessary to gain a clear understanding, not only from a group perspective, but also from individuals. Over-recruitment will take place to cover for no-shows.

People with the same current and predicted future (mode) cognitive complexity, thus people without future transition in levels of complexity, will be placed in a group. Groups with individuals with possible future transitions will also be formed. Eight focus groups will be formed. The rule of thumb is three to five group meetings, but more meetings are ideal in this study to illustrate a possible shift in needs as natural cognitive complexity increases. Morgan states that there should be more than one group in each segment where multiple segments are used, hence the use of CPA and IRIS assessed groups that overlap according to results (Morgan, 1997: 43 - 44). Inference will rely on adequacy of data collected. This occurs when saturation occurs (Neuman, 2003: 438).

The available focus groups indicated in Table 3.1 were compiled, based on individuals who were assessed in different geographical areas. There are instances where there are not enough people with specific measured profiles to form a focus group per geographical area, hence the classification according to possible focus groups, as well as population assessed. People who are in the groups indicated in orange will be invited to focus group sessions. The invitation letter send out for this research is included in Addendum C.

Table 3.1: Population & Sample

Cognitive Complexity Groupings	People Available per Grouping	Groups available per Region				Total
		Area C	Area D	Area A	Area B	
IRIS Assessment						
Q, Q, Q, Q	41		1	1	1	
Q, S, S, S	39	1	1	1	1	
S, S, S, S	29	1		1	1	
S, S, S, P	18	1	1			
S, P, P, P	24		1		1	
Total	151	3	4	3	4	14
CPA Assessment						
CS > MP	11	1				
CS > MD	5		0			
CP > MP	10	1				
CP > MD	23	1	1	1		
CP > MI	6	0				
CD > MI	6	1				
Total	61	4	1	1	0	6
Overall Total	212	7	5	4	4	20

Q = Quality S = Service P = Practice D = Strategic Development
 I = Strategic Intent C = Current M = Mode

3.3.2.3 Pilot Study

Steward & Shamdasani, (1990: 66), indicated that pre-testing can range from mock focus groups to respondents representative in the actual focus groups. The pilot study will be conducted on one focus group to fine-tune the modus operandi for the main investigation. Time will be provided for criticism and comments from members of the focus group. Respondents will be asked to comment on the wording of the questions, the sequence of the questions and missing and confusing questions (De Vos, *et al*, 2002: 210, 215 & 337).

3.3.2.4 The Interview

Four broad criteria for an effective focus group interview will be used. The interview will:

- Cover a maximum range of relevant topics by not narrowing the discussion.
- Provide data that are as specific as possible, this should be anchored in experience.
- Foster interaction that explores the participant's feelings in some depth, which can be obtained by motivating participants to share personal experiences.
- Take into account the personal context that participants use in generating their responses to a topic (Morgan, 1997: 45).

The following aspects are the direct responsibility of the researcher (De Vos *et al*, 2002: 314-318):

3.3.2.4.1 Interview Guide

A combination between the more structured and less structured group interview will be utilised to extract information, thus a semi-structured and open-ended interview technique. The degree of structure depends on the purpose of the study (Struwig, 2001: 100). Structure to a degree will contribute to comparisons

between groups, but there will still be ample openness to contribute to exploratory information (Morgan, 1997: 39 - 40).

An interview guide will be developed from the literature and consultation with content experts. Neutral, open-ended questions will be designed. A funnelling technique is ideal for this study to obtain information from broader descriptions to specifics. The format of questions tend to start from the general and the non-threatening and progress gradually to the specific and that which may be threatening. Funnelling makes it possible to hear the participants own perspectives in the early part of each discussion as well as responses to specific interest of the researcher in the latter part of the discussion. Working from a more specific, individual focus, to a consensus model for provision of information, will constitute the less often used inverted funnel technique. Opening questions are designed to assist participants by aiding recall on a change situation and subsequently making it easier for them to answer later questions. A way to engage participants quickly will be utilized by raising the topic of discussion and asking personal anecdotes related to the topic. This helps building rapport and breaking down inhibitions (Struwig, 2001, Morgan, 1997 and Steward & Shamdasani, 1990). Questions will be generated for opening, introduction, transition, and key ending discussions. The guideline of a limit of four to five distinct topics with preplanned probes under each topic in more structured groups will be used (Morgan, 1997: 47). The interview guide used for this research is included in Addendum D.

3.3.2.4.2 The Moderator's Role

A moderator is responsible for controlling the flow of discussion, usually from a general discussion to specifics regarding the aspects under discussion (Dillon *et al*, 1993: 138). Morgan (1997: 48) highlights that the title moderator, highlights the orientation towards helping out someone else's discussion.

The researcher will fulfil a moderative role. Structure to the inquiry into the groups will be given in the form of concept cards to probe for needs regarding key concepts in the research question. No specific predetermined questions will be asked regarding the key concepts. This will allow free-flowing discussions and probing (Dillon, Maden & Firtle, 1993: 134). This technique will allow the collection of information that would be difficult, if not impossible, to obtain through traditional interviewing methods. It is important for the moderator to focus on the participants' first hand experience of their life-world, rather than on their interpretation or speculative expectations (Welman & Kruger, 1999: 196).

Key aspects that the moderator will give attention to, during the facilitation are (De Vos *et al*, 2002: 300-301; Welman *et al*, 1999: 197-198, and Morgan, 1997: 31 & 49 - 51):

- Introduction, including purpose of the research, role of the interview in the research,
- Ground rules which will include:
 - There are no wrong answers
 - One speaker at a time
 - No side conversations among neighbours
 - No domination of other people
 - Appropriate time required
 - Confidentiality
 - It is necessary to stress anonymity and the interest in them as individuals with their uniqueness
 - All members' presence and opinions are necessary for the success of the group (Steward, *et al*, 1990: 94)
- Permission will be obtained for tape recording. It will be explained that the transcription of the recordings will be done in such a way that individual identities will not be revealed. A guarantee that identities will be anonymous, contributes to the perceived ethical use of the sessions'

information. Concerns about invasion of privacy will be dealt with by the latter statement.

- Each participant contributes with an opening statement regarding his or her experience of the topic. Notes will be made during the session to be used by the facilitator as prompts for further discussions.
- Utilise issues that participants have raised as a basis for moving to another segment of the guide.
- Establishing rapport and removing barriers
- Identify implicit and explicit meanings. Recognise areas where probing is necessary.
- Analysing the interview while participating.
- Summarise the major points. Ask: "Have we missed anything?"
- Each participant gives a final statement, which may not be challenged.

Morgan (1997: 47) advises that it is safe to set the length of the interview at 90 minutes, but to tell participants that the discussion will run 2 hours, providing a cushion regarding time constraints.

3.3.2.4.3 *Setting and Equipment*

The following need to be organised before commencement of the interviews (Struwig, 2001):

- Venues need to be booked for each focus group.
- An audio recorder as well as a backup need to be in place. Additional batteries are also needed as backup.

It is advisable that participants sit around a table where eye contact between people is possible. Nametags may be used to provide a basis for building greater rapport (Steward & Shamdasani, 1990: 88).

3.3.2.4.4 *Field Notes*

The researcher will write field notes, directly after each focus group session. Empirical observations as well as interpretations will be included in the notes, notes to include (Struwig, 2001):

- Seating arrangements
- Order in which people speak
- Non-verbal behaviour
- Striking themes and highlights

3.3.3 Data Analysis and Interpretation

The goal of the analysis is to organise specific details into a coherent model or set of interlocked concepts as Neuman (2003: 440) describes. Exploration of relationships between categories of data will be used to build on grounded theory relating to communication in change. This formidable task for qualitative researchers is increased by the cyclical nature, described as a data analysis spiral. Data analysis and collection takes place, paradoxical simultaneously and separately, in qualitative research (De Vos et al, 2002: 340-341). Analysis is furthermore seen as the interplay between researchers and data (Strauss, *et al*, 1998:13).

Data will be kept intact for each focus group's information. This will be done through labelling audiotapes and notes. Data from the audiocassettes will be transcribed and studied along with notes taken during and after the sessions. Categories of meanings will be identified which have internal convergence and external divergence (De Vos et al, 2002: 344-347). Classification of information will be according to categories, themes or dimensions.

Analytical efforts must seek a balance between the interplay between the two levels of analysis, namely the individual and the group (Morgan, 1997: 60). Microanalysis will be done at the beginning of the research project to discover categories, to uncover the relationships among concepts, and to suggest

relationships among categories. The latter is a combination of open and axial coding (Strauss and Corbin, 1998: 57 & 70).

3.3.3.1 Content Analysis

Content analysis is defined as a research technique for making replicable and valid inferences from data to their context by means of classification of sign-vehicles into categories based on the judgement of an analyst. Semantic content analysis is the suitable type of content analysis for this study. It is used to classify signs according to their meanings. Designation analysis as a semantic approach is determined by the frequency with which certain objects are mentioned (Steward & Shamdasani, 1990: 106, 107 & 111). Recording as a second step of content analysis requires the execution of an explicit set of recording instructions that must address as least four different aspects of the recording process, namely:

- The nature of the raw data, that is the transcript from the tape recordings;
- Characteristics of the coders, including special skills such as familiarity with the subject matter, which is reflected in the researcher's training as a CPA practitioner;
- Training that coders will need, in order to do recording, which is included in the study for research methodology; and
- Specific rules for placing units into categories.

3.3.3.2 Open Coding

Coding is defined by Strauss and Corbin (1998: 3, 15, 20 & 25) as the analytical process through which data are fractured, conceptualised, and integrated to form theory. Conceptualising in this definition refers to conceptual ordering where data is organised according to a selective and specified set of properties and their dimensions. Conceptualising is the precursor to theorising. The end product, namely theory, is a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework

that can be used to explain or predict phenomena, thereby providing guides to action.

Strauss and Corbin (1998: 102) interestingly refer to open coding as the discovery of concepts by uncovering, naming and developing concepts in order to open up the text and expose the thoughts, ideas and meaning contained in it. Conceptually similar or related information in meaning, are grouped under more abstract concepts termed categories.

The following coding procedure, proposed by De Vos (2002) and Strauss and Corbin (1998: 103 –121) will be followed:

1. Conceptualising: labelling phenomena (one to three words);
2. Discovering categories;
3. Naming categories; and
4. Developing categories in terms of their properties and dimensions.

Conceptualising, seen as an abstracting act where names are given for data, will include words of respondents themselves, referred to as in vivo codes (Strauss *et al*, 1998: 105). Coding will furthermore take place according to emergent encounter with the data self (Morgan, 1997: 61).

Concepts will be grouped and categorised under more abstract explanatory terms, named categories, once there is an accumulation of concepts. Categories will be developed in terms of properties that are the general or specific characteristics or attributes of a category, as well as dimensions that represent the location of a property along a continuum or range. Patterns will be formed when groups of properties align themselves along various dimensions (Strauss *et al*, 1998: 114 & 117).

Neuman (2003: 442) states that codes have five parts: the label, a definition with main characteristics, a “flag” (description how to recognise the code in the data) as well as exclusions or qualifications and an example.

Trends and patterns can be investigated internally to each group, between groups, in each individual and between individuals. Coding can be done on the mentioning of a given code by any individual, whether each individual participated mentioned a given code and whether each group's discussion contained a given code. Group-to-group validation will take place, focusing on the three factors that influence how much emphasis a given topic should receive, namely: how many groups mentioned the topic, how many people within each of these groups mentioned the topic, and how much energy and enthusiasm the topic generated among the participants (Morgan, 1997: 60 & 63).

3.3.3.3 *Axial Coding*

This stage is seen as a second pass where the focus falls on initial codes, more than on the data. Organising of ideas and themes and identification of the axis of key concepts is done by means of clustering causes and consequences, sequencing and looking for subdimensions and subcategories (Neuman, 2003: 444). Axial coding is seen as the process of relating categories to their subcategories, termed axial because coding occurs around the axis of a category, linking categories at the level of properties and dimensions. The purpose of axial coding is to begin to reassemble data that were fractured during open coding (Strauss *et al*, 1998: 123 -124).

Guidelines for distinguishing between categories and subcategories are given by Strauss *et al*, (1998: 125) in that a category, which is a group of labelled phenomena, has the ability to explain what is going on. Sub-categories answer questions about the phenomenon such as when, where, why, who, how, and with what consequences, thus providing greater explanatory power to a concept.

A few aspects to consider during axial coding, related to paradigms, are (Strauss *et al*, 1998: 127 – 133 & 136):

- If one studies structure only, then one learns why, but not how certain events occur. If one studies process only, then one understands how persons act or interact but not why.
- Coding is done to explain and gain an understanding of phenomena and not for terms such as conditions, actions or interactions and consequences.
- Phenomena should include repeated patterns of happening, events or actions/interactions that represent what people do or say, alone or together in response to the problems and situations in which they find themselves.
- Explanations must include micro and macro conditions as well as indications of how these intersect with each other.
- Tactics, or the how, by which persons handle situations, problems and issues that they encounter are termed actions/interactions. Strategic actions/interactions are purposeful or deliberate acts that are taken to resolve a problem and in so doing shape the phenomenon in some way. Routines are actions/interactions that tend to more habituated ways of responding to occurrences in everyday life.
- A category is considered saturated when no new information seems to emerge during coding.

Analysing data to identify processes is the purposeful looking at action/interaction and noting of movement, sequence and change as well as how it evolves in response to changes in context or conditions. Sub-processes are usually individual tactics, strategies and routine actions that make up the larger act. It is important that processes are related to structure, meaning the alignment of actions/interactions to conditions (Strauss *et al*, 1998: 167 & 169).

3.3.3.4 Selective Coding

This is seen as a last phase where the researcher scans data and previous codes for themes, comparisons and contrasts (Neuman, 2003: 444). Selective coding is the process of integrating and refining the theory (Strauss *et al*, 1998: 143).

Choosing a central category is the first step in integration. Criteria for choosing a central category include (Strauss *et al*, 1998: 146 – 147):

- It must be central, thus all mayor categories can be related to it.
- It must appear frequently in the data.
- Data is not forced.
- The name is sufficiently abstract for further research.
- It enables the theory to grow in depth and explanatory power.
- The concept is able to explain variation as well as the main point.

Strauss and Corbin (1998: 157) promote the point that the researcher should provide his or her own names for what is going on from properties and dimension out of the data. Comparisons, describing how researcher conceptualisations of data extend or fit with existing literature can be made later in writing of findings.

3.3.4 Trustworthiness Features:

A tool that will be used to increase trustworthiness is triangulation. The process of varying data-gathering techniques and approaches serves to enhance objectivity (Strauss & Corbin, 1998: 43-44). An open-ended style is eminent in focus groups, but this will be complemented by a qualitative technique. A non-conventional flash card system (probing words) will be shown to the participants. Participants will write their first thoughts before commencing with a group discussion. This will ensure a broader representation of all participants and reduction in bias. The first thoughts will be coded and used in conjunction with qualitative data.

The criteria used to evaluate soundness for a qualitative study are discussed in context of Lincoln and Guba's proposed constructs as discussed by De Vos (De Vos *et al*, 2002: 351-354) and Schurink (2003: Lecture 6, 14-16).

3.3.4.1 Credibility

This alternative is associated with internal validity. Conversations of approximately 90 minutes will be recorded on audiocassettes. Transcriptions of the conversations by an external person will ensure accurate descriptions. Identification of individuals on audio can be aided by keynotes of speaking order among participants made by the moderator.

3.3.4.2 Transferability

This alternative is associated with external validity or generalisability. Schurink (2003) indicated that the burden of demonstrating the applicability of one set of findings to another context lies with the researcher who would make this transfer, it is consequently not included in the current study.

External validity is seen as the weakness of a qualitative approach – this view can be countered by the fact that this study utilises a current model (stratified systems theory). Data collection and analysis will be guided by a theoretical model approach, applied by a trained practitioner in the theory who has extensive exposure to its application.

The study's objective is to explore the research topic, thereby formulating questions that are more precise, which future research can answer (Neuman, 2003: 29). It is the researcher's plan to use this study as a first stage in order to know enough to design a model for communication. Focusing on content during a change process is a possible area in a later study. Transferability will be tested in the application of a communication model in change. The purpose of using a theory-building methodology is in the language of explanatory power rather than that of generalisability (Strauss *et al*, 1998: 267).

3.3.4.3 *Dependability*

This concept is associated with reliability. Findings are influenced, in the qualitative approach, by changes in the phenomenon and design and setting. The qualitative/interpretative assumption of an ever-changing universe makes the concept of replication a problematic issue. This is in contrast with the positivistic approach where reliability is inherent (Marshall and Rossman, quoted by Schurink).

The phenomenon under study, is not only focused on precise information needs, but to a greater extent on the overall complexity of the type of information. It is clear that there will be many settings for change and a myriad of contributory factors on information needs (like preferred personality type, culture and team roles).

Cognitive complexity is stable over a period, thereby reducing a dependability effect, based on variances over short periods. The aim of the research is to identify general information needs that can be met in an array of changing contexts, consequently limiting situational needs.

3.3.4.4 *Confirmability*

The traditional notion of objectivity is captured under this concept. A person independent from the current study will evaluate the data. This person will be an industrial psychologist, trained to evaluate people's current and possible future levels of operating complexity (CPA practitioner).

3.3.4.5 *Limitations*

3.3.4.5.1 *Access to data*

The freedom to select a sample group randomly is limited by the geographical distribution of the population of employees assessed.

3.3.4.5.2 *Extraneous factors in the environment*

Specific change situations in the business may influence individual's responses to various degrees – especially if involvement to recent changes in the workplace differed drastically between different focus groups.

3.3.4.5.3 *Using Literature*

Strauss & Corbin (1998: 49) state that it is impossible to know before the investigation what the most relevant problems will be or what theoretical concepts will emerge. Knowledge on literature may even constrain the researcher in grounded theory.

3.3.4.6 ***Assessment of the generalisability of the study's findings***

The concept of cognitive complexity is not context bound, thus ensuring a degree of detachment to the specific business environment. Limitations to generalise back to the larger population may exist because a qualitative methodology is used.

The limitations on the research may definitely warrant future research, where the findings of the current study are taken to a second phase of quantitative verification in a bigger sample group. It is important to take note that building blocks of information distribution are needed before it can be tested.

CHAPTER 4

Findings and Discussion

4.1 Introduction

Focus groups were held in three geographical areas to ensure that there were enough people to include in each focus group. Each group needed to be clustered according to the same profile from the CPA and IRIS assessments.

Table 4.1: Characteristics of the Focus Groups

Focus Groups Sorted in terms of Current Capability	Assessment tool used prior to selection	Cognitive Complexity Profile	Geographical Area	Number of participants
Focus Group 1	IRIS	Q, Q, Q, Q	Area A	5
Focus Group 2	IRIS	Q, S, S, S	Area A	4
Focus Group 3	IRIS	S, S, S, S	Area A	5
Focus Group 5	IRIS	S, P, P, P	Area B	5
Focus Group 6	CPA	CS and MP	Area C	4
Focus Group 7	CPA	CP and MP	Area C	3
Focus Group 4	CPA	CP and MD	Area A	3
Focus Group 8	CPA	CD and MI	Area C	5

Q = Quality S = Service P = Practice D = Strategic Development
 I = Strategic Intent C = Current M = Mode

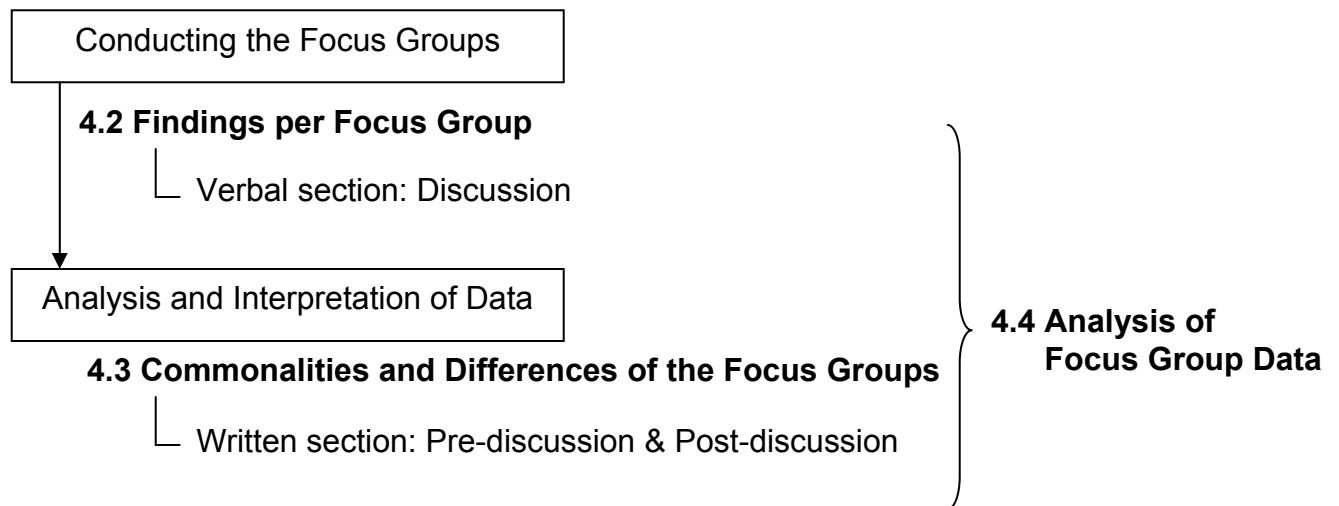
An additional advantage of the use of different geographical areas is to determine if trends are geographically bounded, or if generalisations are possible. There were consequently three IRIS groups from area A and one from

area B. The CPA groups amounted to three groups from area C and one from area A.

The area B IRIS group is also important in the sense that it is possible to explore how it corresponds with focus group 6, a CPA group, which has a current capability of service and transition to practice.

An outline for the rest of this section is provided in figure 4.1. Concepts obtained from the research will firstly be provided in section 4.2. Analysis of data will start from section 4.3. Categories as well as axial descriptions and analysis are given in relation to clusters in section 4.4.

Figure 4.1: Contextualising the Findings and Discussion Section with Research Methodology



4.2 Findings per Focus Group

The focus group session was conducted within the broad framework of the focus group guide, as included in Addendum D. Issues raised in the focus groups during discussions are mainly clustered around the phrase cards used with the words: Who?, When?, Why?, Where?, How Much? and Format and Medium on

it. The focus areas, which form the basis of the prompts, can be seen in section three of Addendum D.

Detail on each focus group's feedback on the questions from the focus group guide is included in Addendum E. The introduction phrase's contents: What is your information needs during change?, are described under the general sections. Information from the focus groups is clustered to each question phrase where it fits best, not necessarily where or when it was discussed in the focus groups. Information provided in Addendum E is consequently not interpretation of data, but rather a description of issues and concepts that made up the content of analysis as discussed in section 4.4.

4.3 Commonalities and Differences of the Focus groups

4.3.1 Written Response

Table 4.2: Response Comparison on the Written Part of the Focus Session

Focus Groups	Period of Change		Information Received		
	Minimum Period	Maximum Period	Received	Not Received	Received Some
Focus Group 1	2 weeks	6 months	48 %	48%	4%
Focus Group 2	3 months	6 months & ongoing	47%	47%	6%
Focus Group 3	3 months	18 months & ongoing	50%	3%	47%
Focus Group 5	3 weeks	3-5 years & ongoing	58%	21%	21%
Focus Group 6	2 weeks	15 months	25%	20%	55%
Focus Group 7	Monthly	12 months, still on	33%	60%	7%
Focus Group 4	2 months	16 months	23%	23%	54%
Focus Group 8	3 months	24 months & ongoing	32%	16%	52%

The focus groups in table 4.2 are colour-matched according to groups with the same current capability. Green is quality, orange is service, pink is practice and purple is strategic development. Percentages in table 4.2 are given with caution, as this study is not quantitative of nature. It is furthermore evident that the number of participants in the groups does not warrant generalisations. Information in this table is to complement general trends from the focus group discussions. The purpose of the written section of the focus group was to anchor

experiences and needs of individuals before general discussions in the group took place to prevent extreme groupthink situations.

Trends on information received from table 4.2 include:

- IRIS assessed groups: Focus groups one, two, three and five have indicated between 48% and 58% that they received information required during change. This is a general indication that about half of the information was received.
- Current capability in quality: The groups indicated 47% and 48% that they did not receive information that was required, which is also close to half of the information. Focus group one and two furthermore indicated 4% and 6% of information of which some were received. It is evident that the quality groups had a strong opinion that information was there or it was not there, there is consequently not a strong view regarding partial information.
- Current capabilities of service: Focus group three and five, differed from focus group 6, which is also in current service, but a CPA group regarding information received. Similarities in information not received are seen in the two groups that show transition to the capability of practice.
- CPA assessed groups: The CPA groups indicated 23% - 33% of information required was received, showing a close range difference of 10%.
- The CPA groups showing transition: Groups, six, four and eight, have an over 50% indication of some information received in common. Focus group three, who are accumulators in current capability for the next 15 years, also showed a high rate of information received. There is however a case to explore for the IRIS measured service group, as individuals may have future capability in other areas than service.
- Focus group three indicated a trend to find information, where only 3% of information was not received at all.
- An exceptional high level of information not received was indicated by focus group seven. This group has current capabilities in practice as well as a mode of practice. It is evident that this group of people are responsible for

the implementation of strategy, although they do not fully understand strategy in terms of cognitive complexity.

- Focus group four had greater correspondence in information received with the higher cognitive capability and mode groups, than the lower capability groups, even though groups one, two, three and four are in the same geographical area.

The period of change as experienced by the focus group members generally increases from less cognitive complexity to greater cognitive complexity. This confirms the theory of longer time-spans used, as cognitive complexity increases. Participants of the focus groups indicated experience of a wide range of change in their working environment. Change experienced occurred during the previous two years, thereby qualifying the participants as suitable candidates for the research. Caution on the interpretation of numeric loadings of responses of focus groups four and seven should be taken, as these groups' few respondents are not a significant sample for numerical generalisations.

4.3.2 Verbal Response

Commonalities and differences of verbal response as given in section 4.2, were analysed, and are discussed in detail in section 4.4.

4.3.3 Context of Discussions

There were definite changes that impacted people from different geographical areas differently. All the groups experienced some form of restructuring in their working environment within the past twelve months. Many factors contributed to uncertainties experienced by the groups, like competition in the chemicals market, but the major influencing factor in the time of the discussion was the uncertainties created by the exchange rate on chemical pricing, putting pressure on companies. Each group shared the same organisational restructuring experience. Three business units in which the participants are employed merged with each other, forming a new business unit. The result of this merger was

exposure to different degrees of impact on the participants in each geographical location during the past two years.

4.4 Analysis of Focus Group Data

4.4.1 Analysis Approach

A four phase approach was used to cluster the data generated during the focus group sessions.

4.4.1.1 Phase 1:

Labels were given for concepts found in different data collection methods, which are:

- Pre-Discussion: Data was generated by asking standard questions from the focus group guide. Focus group participants were asked to write down their information needs during change before discussion commenced in the group.
- Discussion: Data was transcribed and summarised to get concepts and descriptions.
- Post-Discussion: Participants to the focus group have written a summary guide on how they would like to receive information on change after discussions took place.

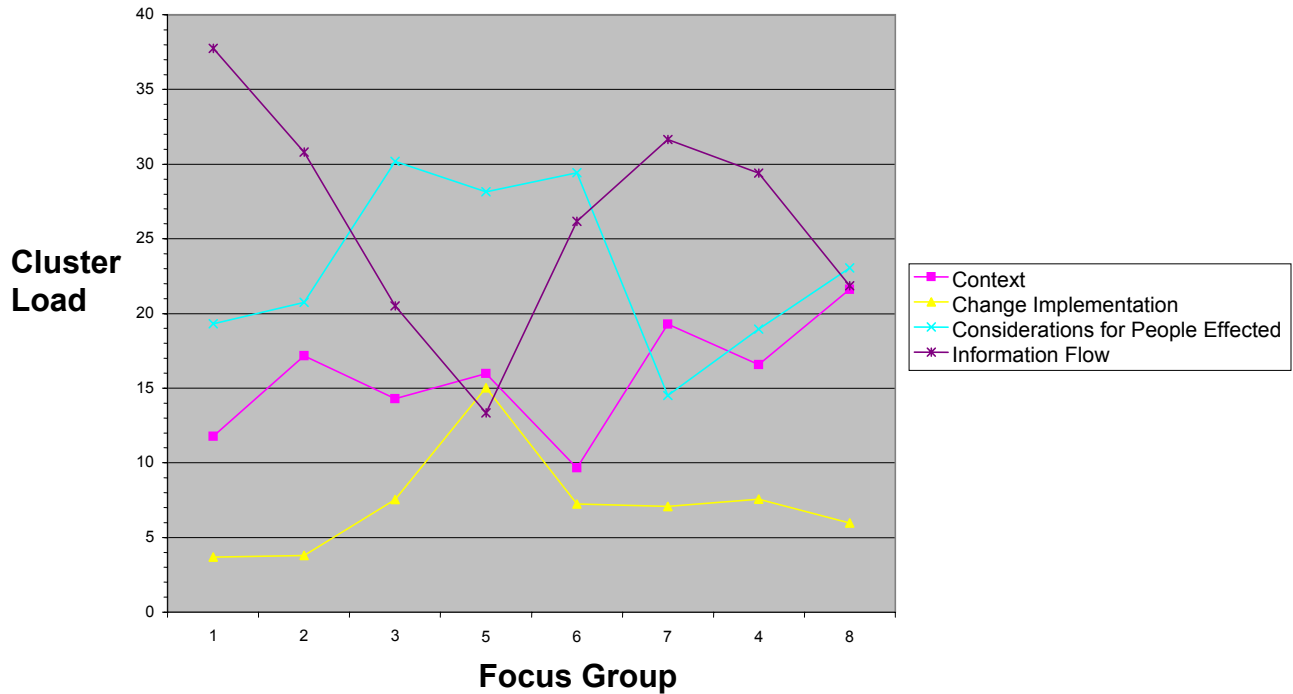
4.4.1.2 Phase 2:

Concepts were clustered, thereby creating clusters of the concepts clusters as labelled separately for the different collection methods. This is the first point where data is integrated from the different collection methods.

4.4.1.3 Phase 3:

Main clusters were formed, thereby narrowing the number of categories to twelve and allowing abstraction of categories.

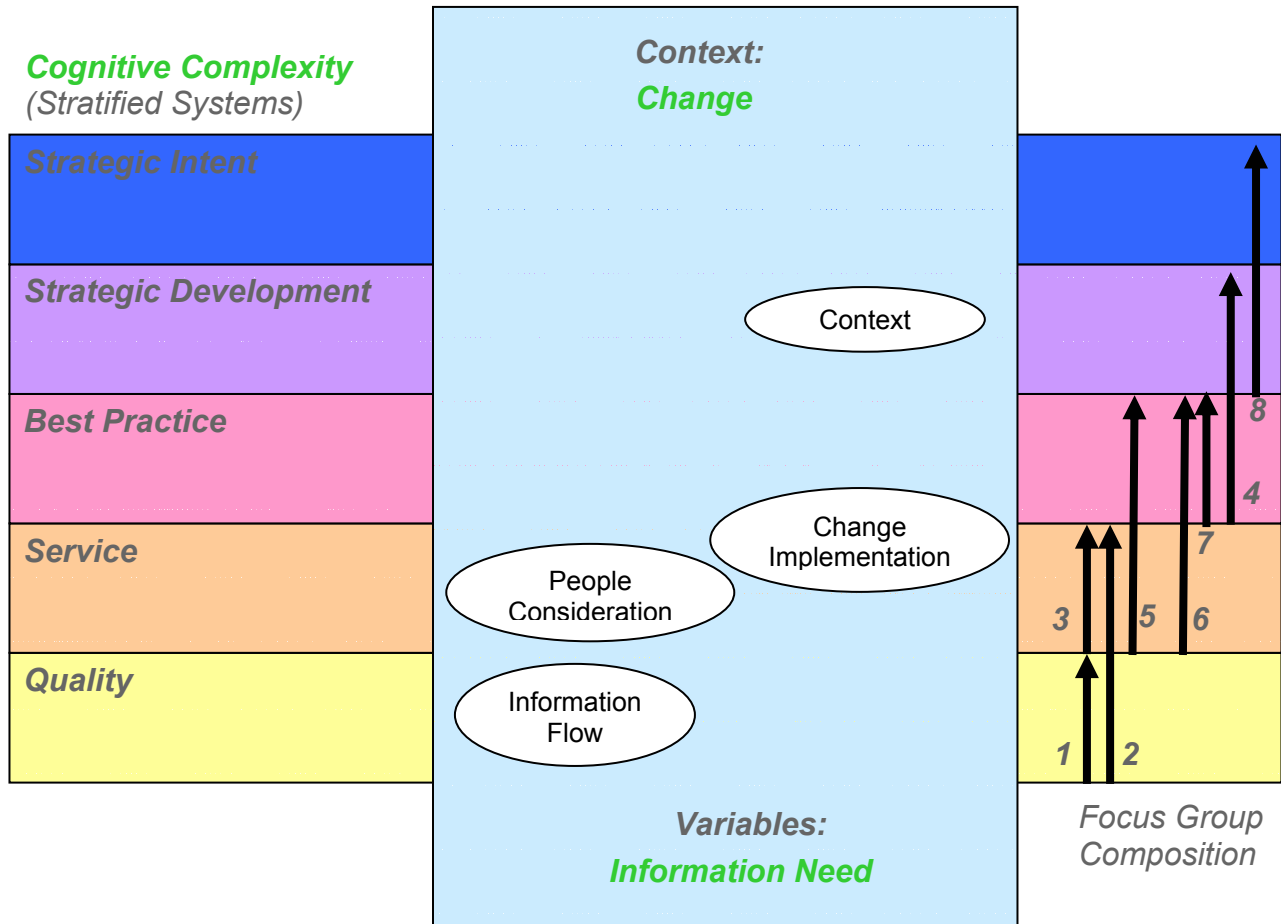
Figure 4.3: Main Clusters per Focus Group, Weighted Values



Interpretation of the main clusters becomes easier when the peaks of Figure 4.2 and Figure 4.3 are plotted on the strata of cognitive complexity as in Figure 4.4. It is clear, with hindsight, that context of change will be the most important information to know at higher levels of cognitive complexity. People considerations, surfaced as the mostly mentioned need for groups with a current capability of service. Context as well as information on change implementation carries almost equal weight for the service groups with a mode of practice.

Main clusters of people's needs for information fall into the range of responsibilities in the requisite organisation, as reflected in the layers of cognitive complexity. Information flow is important to all groups, but the peak is evident early in the layers of cognitive complexity, where the need to understand the context of change is most evident at the higher level of the strata.

Figure 4.4: Main Clusters by Cognitive Complexity

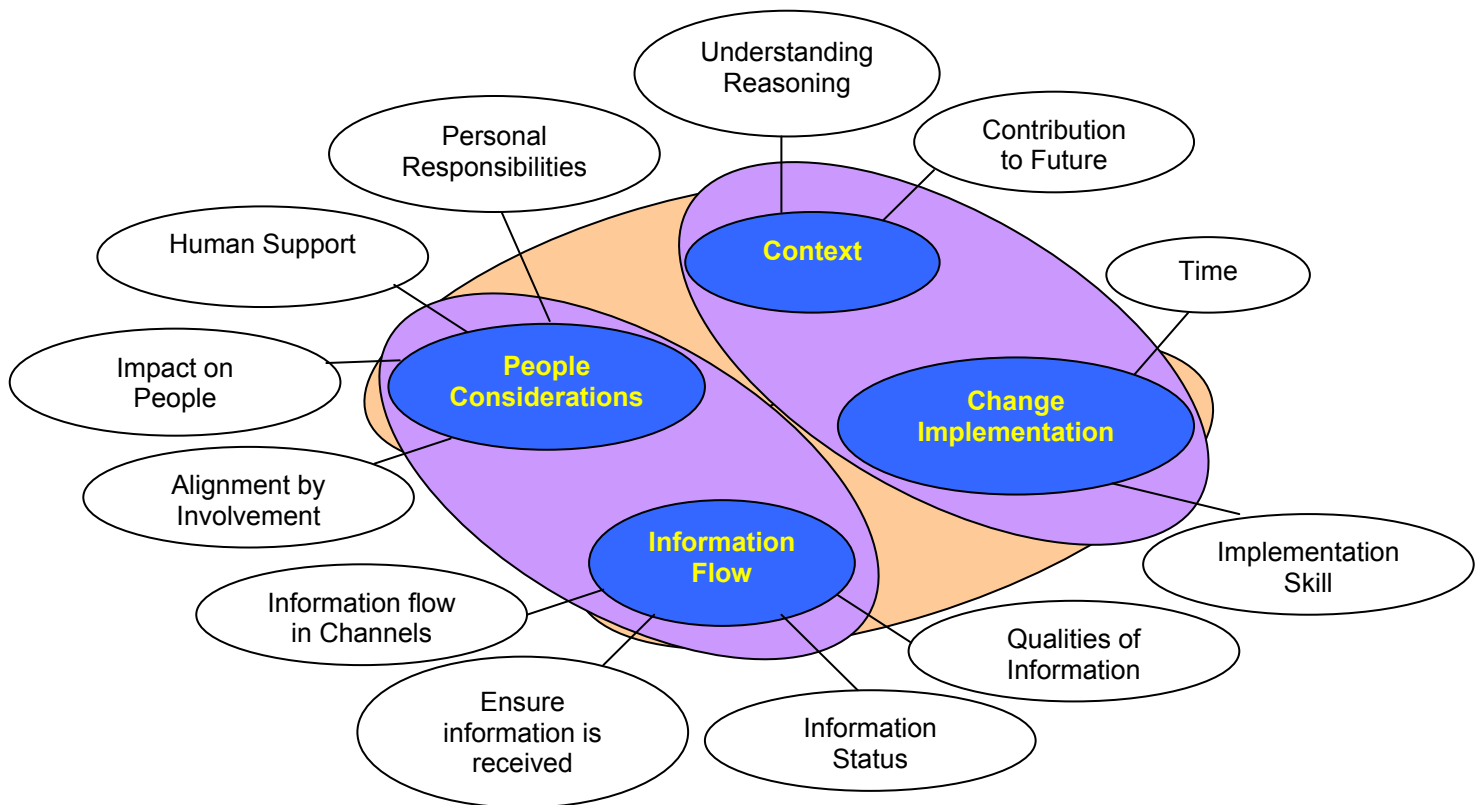


Main clusters are grouped in figure 4.4 according to the areas where they have the highest cluster loading. The arrows illustrating focus group composition, show each focus group's profile according to the previously assessed distribution of cognitive complexity. An arrow only in one stratum indicates that there was not a transition into a higher stratum for IRIS assessed people, for the following fifteen years. Arrows crossing a stratum indicate that a transition into a higher stratum of complexity will take place for individuals in the particular focus group.

Main clusters were created only as a final stage in order to avoid too much abstraction at an earlier stage of relationship forming between concepts. There are furthermore many interrelationships between concepts that were clustered under different main clusters, but illustration of different dynamics may be a

distraction from the fact that there is a clear case for main pillars of people's information needs during change. Interrelationships between the main clusters are illustrated in Figure 4.5 together with each main cluster's group of clusters. Each cluster from the cluster groups at the outer rim of the figure have a relationship to the cluster which is grouped next to it.

Figure 4.5: Cluster Relationships



The methodology of a qualitative study is not to use a quantitative correlation between constructs. A comparison of the loading of concepts on each cluster group and main group can provide valuable insight into the distribution or weights of importance placed on certain concepts. The main clusters reveal nuances in the interpretation of data. There are for example seemingly not much differentiation between the need of focus group five and focus group eight regarding the main group, indicating a need to know more about the context of change, but the cluster group representing contribution to the future indicates a

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clear differentiated need in this regard for focus group eight. Focus group five places more emphasis on understanding reasoning of change when information is needed regarding the context. Both focus group three and five have a current capability of service and were selected from IRIS assessments. They furthermore show the same need to understand the reasoning behind change, to a higher degree than other groups.

Table 4.3: Main Group and Cluster Group Loading of Concepts

Loading of Concepts per Group

No	Focus Group:	1	2	3	5	6	7	4	8
1	Context	12	13	17	20	11	13	10	25
1.1	Understanding Reasoning	4	5	12	12	6	8	7	10
1.2	Contribution to future	8	8	5	8	5	5	3	15
2	Change Implementation	4	3	9	20	8	5	6	7
2.1	Time	0	1	4	10	5	5	4	7
2.2	Implementation skill	4	2	5	10	3	0	2	0
3	Considerations for People Affected	18	16	35	35	33	10	14	27
3.1	Personal responsibilities	2	2	14	7	11	1	6	9
3.2	Alignment through involvement	7	3	12	18	11	3	2	8
3.3	Human Support	1	1	6	7	6	3	5	6
3.4	Impact on People	8	10	3	3	5	3	1	4
4	Information Flow	41	25	23	20	29	22	23	26
4.1	Ensure information is received	22	7	2	5	10	2	0	4
4.2	Information status	12	6	7	11	11	13	9	9
4.3	Information flow in channels	7	12	9	4	5	4	13	8
4.4	Qualities of Information	0	0	5	0	3	3	1	5

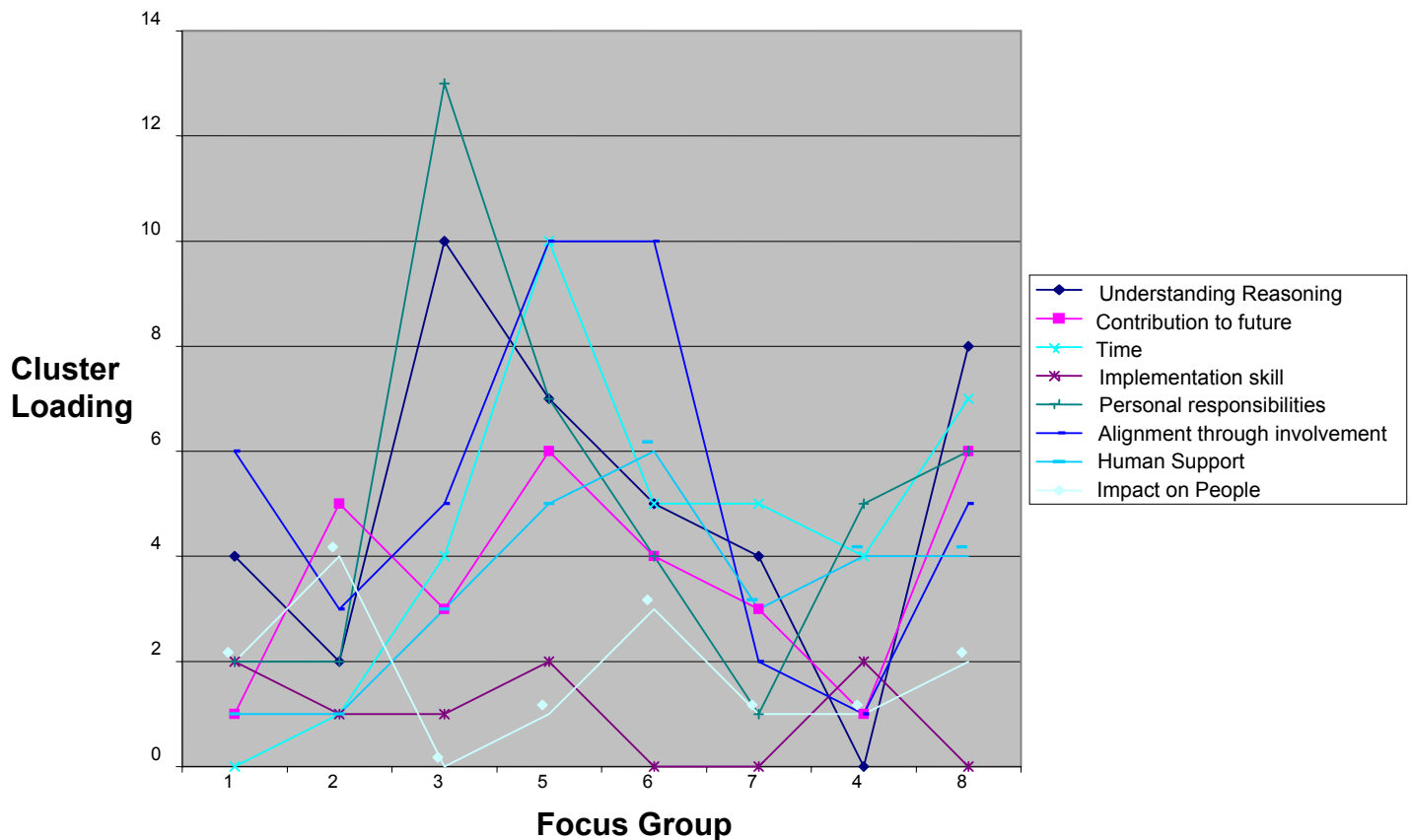
The dilemma of looking only at numbers, is that underlying patterns that surfaced during the focus group discussions are not observable with a brief observation, as indicated in table 4.3. A similar pattern of needs is expected between focus

Cognitive complexity's influence on information needs in change

group five and six, but this close resemblance to each other is mainly observable in the cluster group representing considerations for people affected.

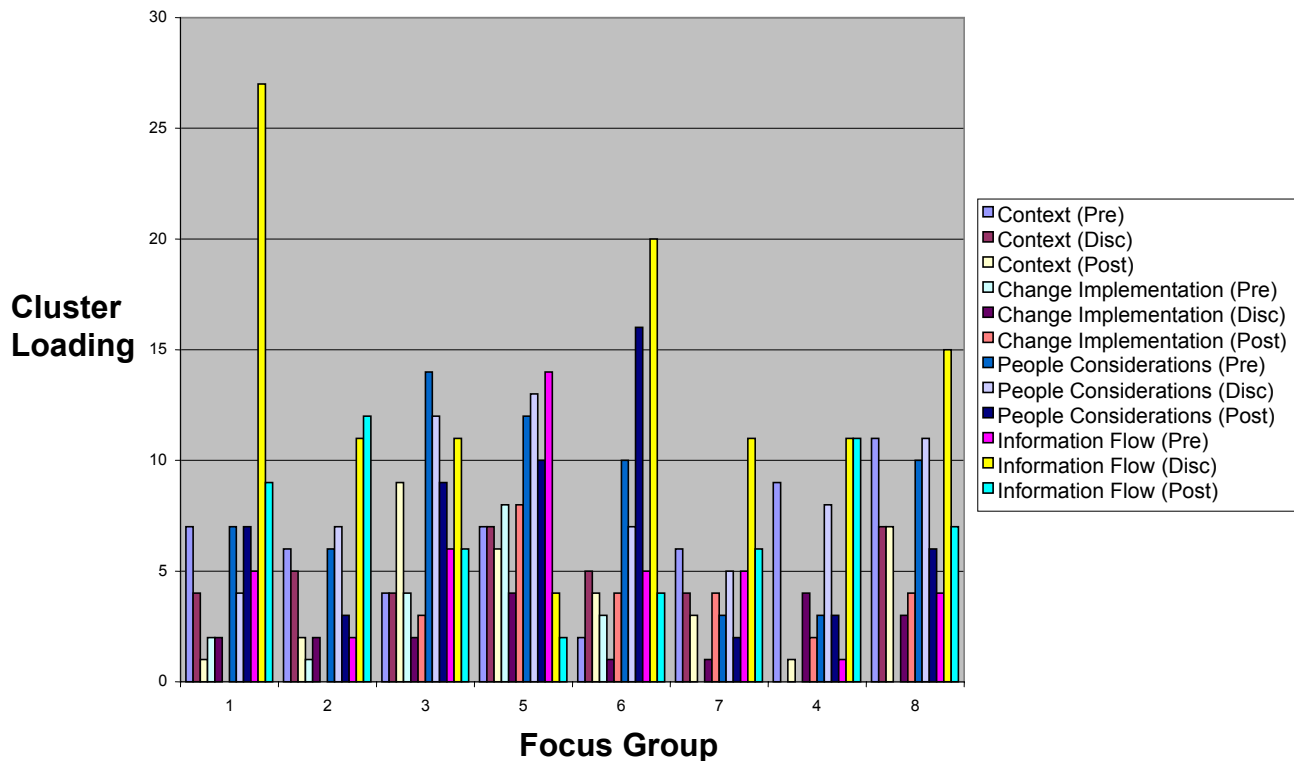
A visual representation of data from the discussion and post-discussion notes as indicated in figure 4.6, reveals a much clearer indication of the relationship between focus group five and six. Alignment through involvement peaks in importance at the same level for focus groups five and six, and human support is of similar higher importance for these groups. Dynamics within the main clusters is evident when focus groups are seen to be grouped with the people orientation groups, but the focus is more on the group's own role clarification in change as seen in the peak of personal responsibilities in figure 4.6. People considerations are even more narrowed moving to the lower strata of cognitive complexity where focus groups two's focus on people was more on knowing what the impact of change will have on them personally.

Figure 4.6: Main Clusters without Information (Discussion and Post-Discussion)



Information analysed separately as a main cluster provides focus on the research question. The building blocks of peoples' needs for information may become distorted if it is believed that information flow is the only focus of the research. It was highlighted in the literature study that there is a wide scope of people needs to consider when addressing information needs during change. A comparison of cluster loading during each phase of conducting the focus groups, shows clear peaks of attention on information flow during the discussion section of the focus group sessions as illustrated in figure 4.7.

Figure 4.7: Cluster and Collection Method Comparison



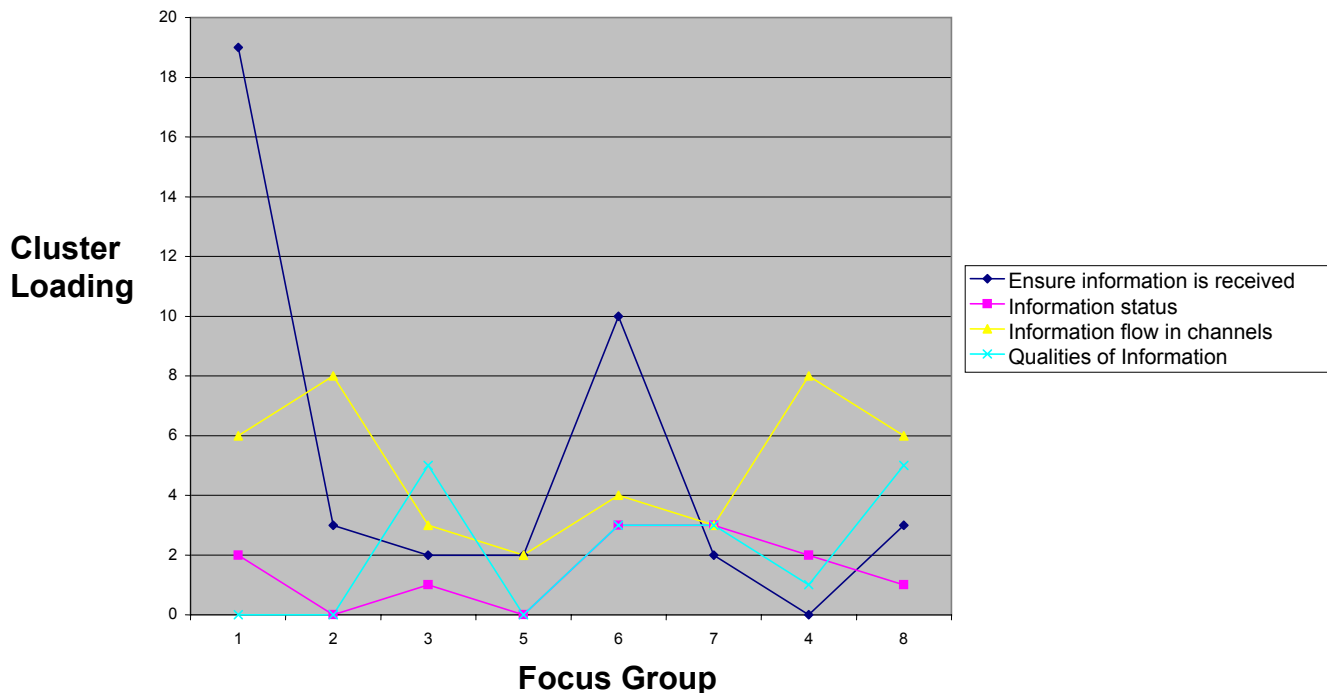
The highest peak for information flow is at focus group one, where the main concern is that people want to have certainty that information is received. Reception of information is linked with information flow in channels as well as the main cluster of people considerations as illustrated in figure 4.5. Flow of information is an alignment issue which is also a personal responsibility.

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Interrelationship of clusters is also evident in figure 4.6 where focus group six emphasised information flow during the discussion, while the statements relating to flow was endorsed by the group's feedback on people considerations in the post-discussion summary, especially with involvement of stakeholders to gather options. The approach to information towards the higher strata of complexity, is using information in a pro-active way, rather than just focusing, like focus group one, on receiving information.

Zooming in on information flow during discussions figure 4.7, shows the cluster group: ensuring information is received, as the major contributor to the cluster loading in figure 4.8. Information flow in channels seems to take a dip in importance for focus groups three, five and six, but the channel is purely replaced by another channel of information, namely human interaction. Ensuring that information is received, is not a data exercise, but rather a matter of personal contact, even in the world of electronic communication.

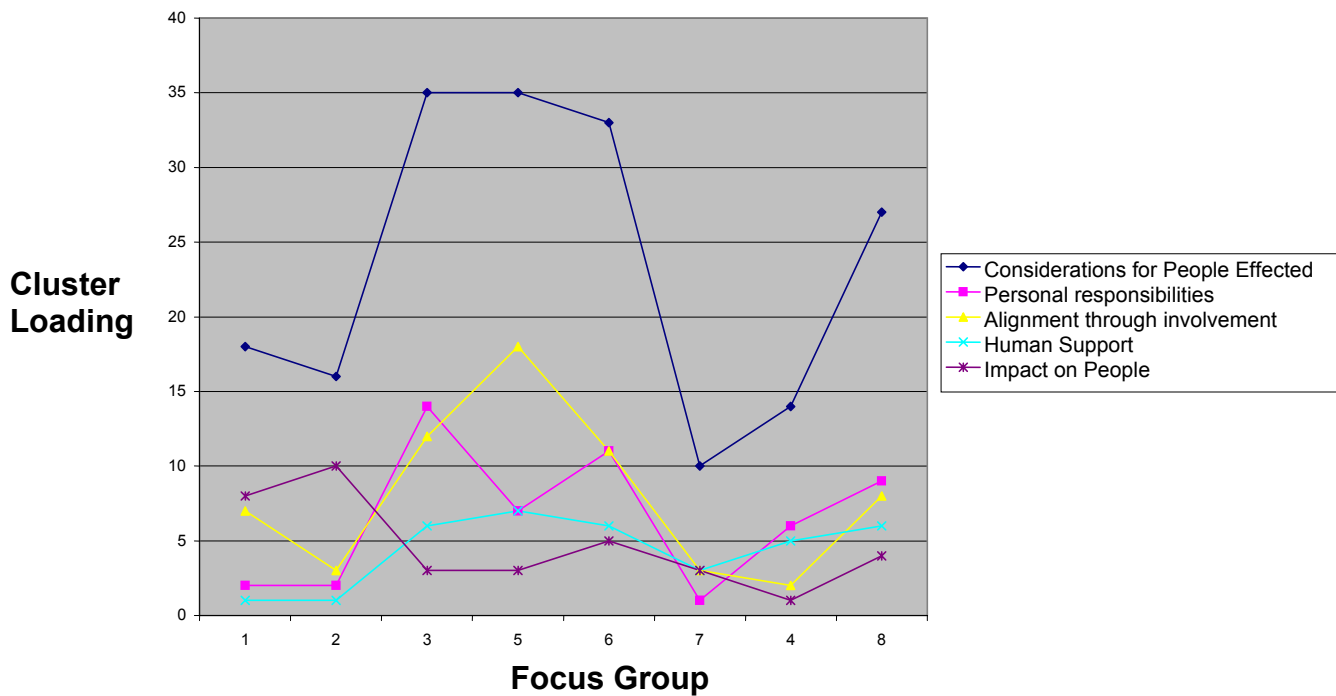
Figure 4.8: Information Flow as from Discussions



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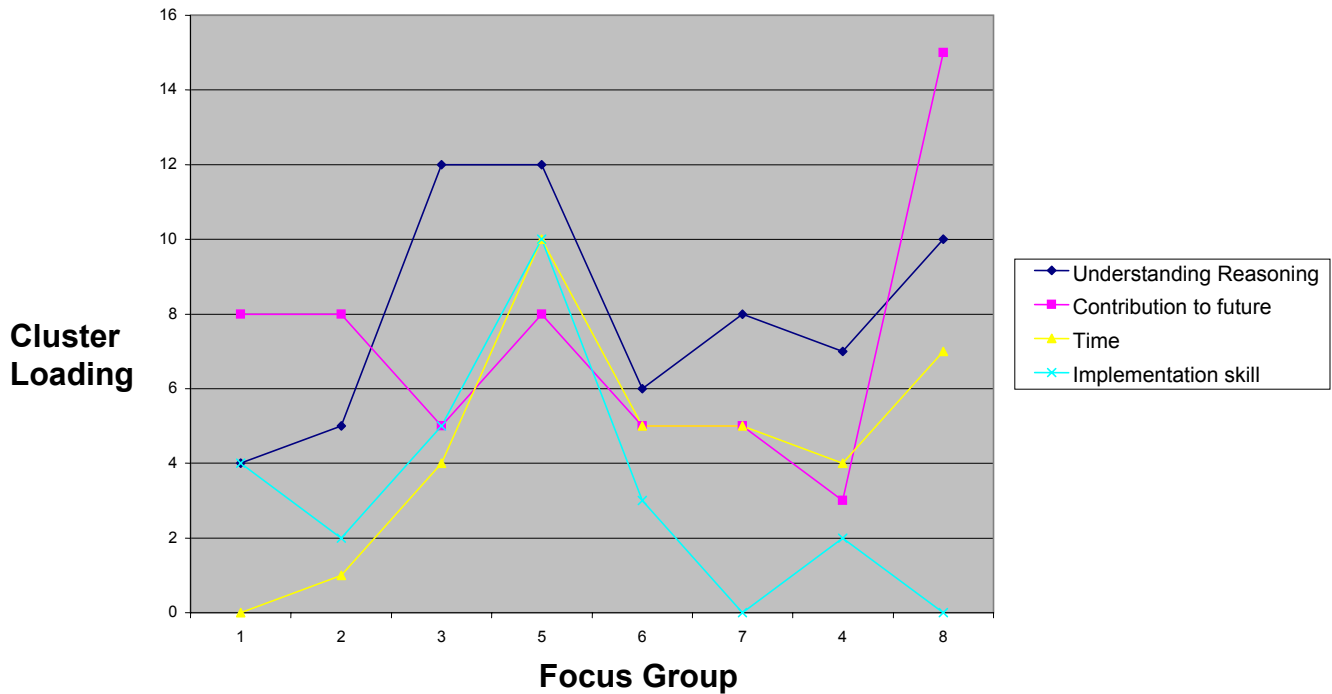
The cluster group representing people considerations, filling the information gap in figure 4.8, is illustrated in figure 4.9. The cluster group, people considerations, was discussed within figure 4.6 on partial data. Figure 4.9 gives an indication of peaks of the same main groups of people considerations, but there are differences in intent when clusters of the second phase are specifically looked at. Peaks in personal responsibilities have internal variation in that focus group three is concerned about personal roles, while focus group six and eight indicated a strong need for responsibility alignment.

Figure 4.9: People Considerations



The visual trend lines for the cluster groups: relationship of context and change implementation, is given in figure 4.10, demonstrating inter-cluster relationships. Skill equipment is a high contributing factor for implementation skill in focus groups three and five. A similar pattern between implementation skill and time can be explained by the need to know crunch dates by focus groups five, six and seven. Groups implementing strategy need to plan around timeframes set for change.

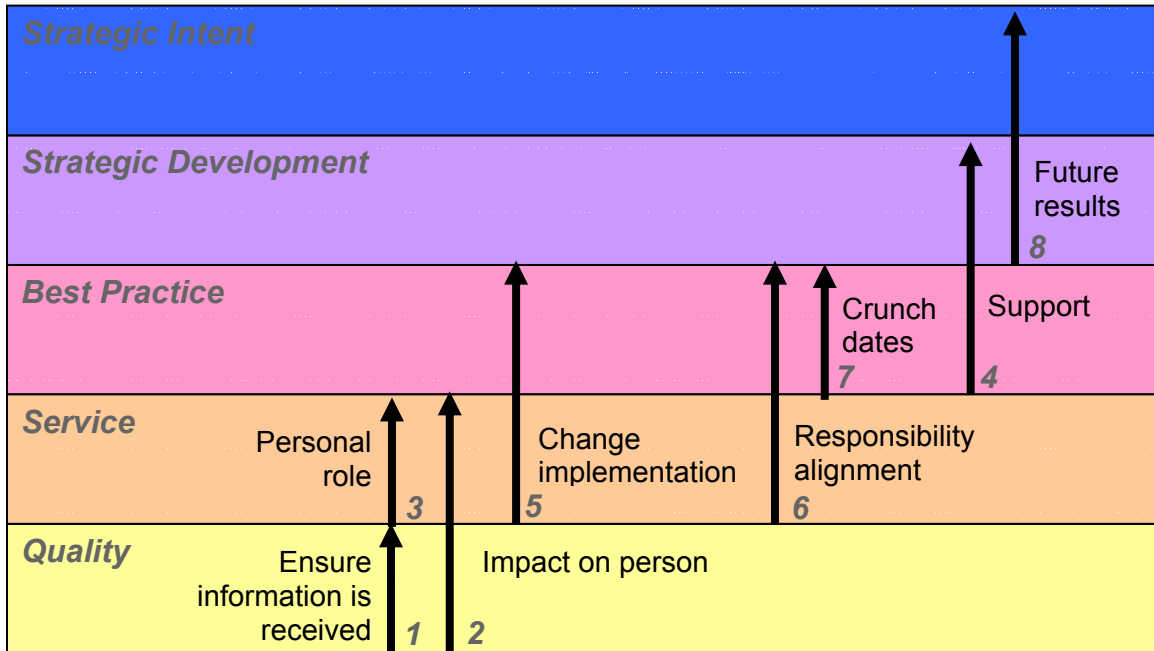
Figure 4.10: Context and Implementation



Variations of the sequence of importance of cluster groups for each focus group provide a priority list to provide variations on the same theme of information between groups. Quality focus groups, one and two, would like to understand contribution to the future in context to the bigger picture. This information is used to understand the reasoning behind change, thereby understanding how to implement change. The service focus groups would like to understand the reasoning behind change, thereby understanding how to implement change according to the expected outcomes with timeframes. Practice focus groups did put an emphasis on the importance for them to understand reasoning behind change and the expected outcome. The practice groups highlighted that strategic information is filtered. They consequently requested honesty and regular feedback.

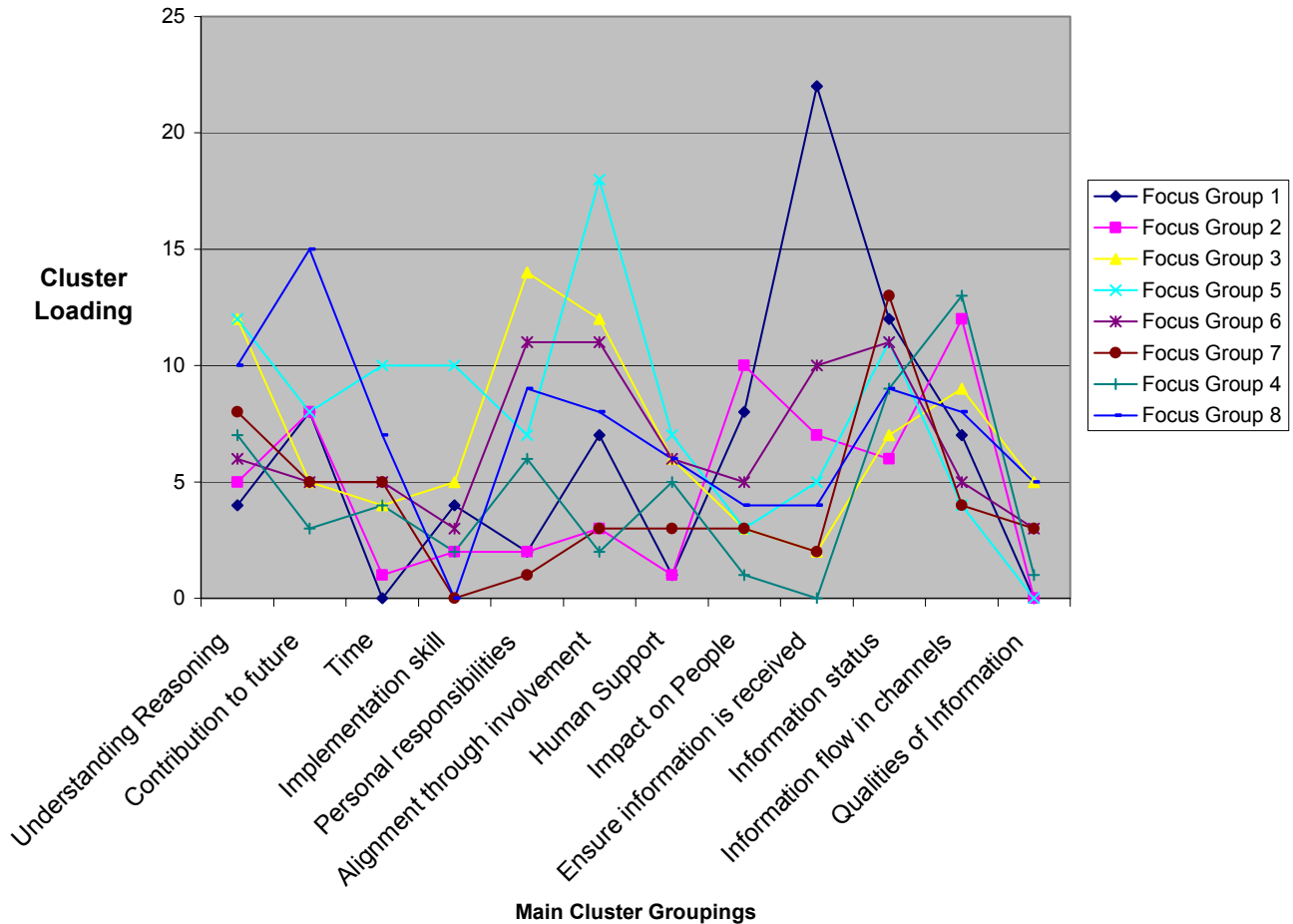
The most important theme for each focus group is illustrated in figure 4.11. The themes are given according to the cluster groups' highest loadings for each focus group. A theme for different modes can be interpreted in context to common current capability themes for each stratum of cognitive complexity.

Figure 4.11: Most important theme for each Focus Group



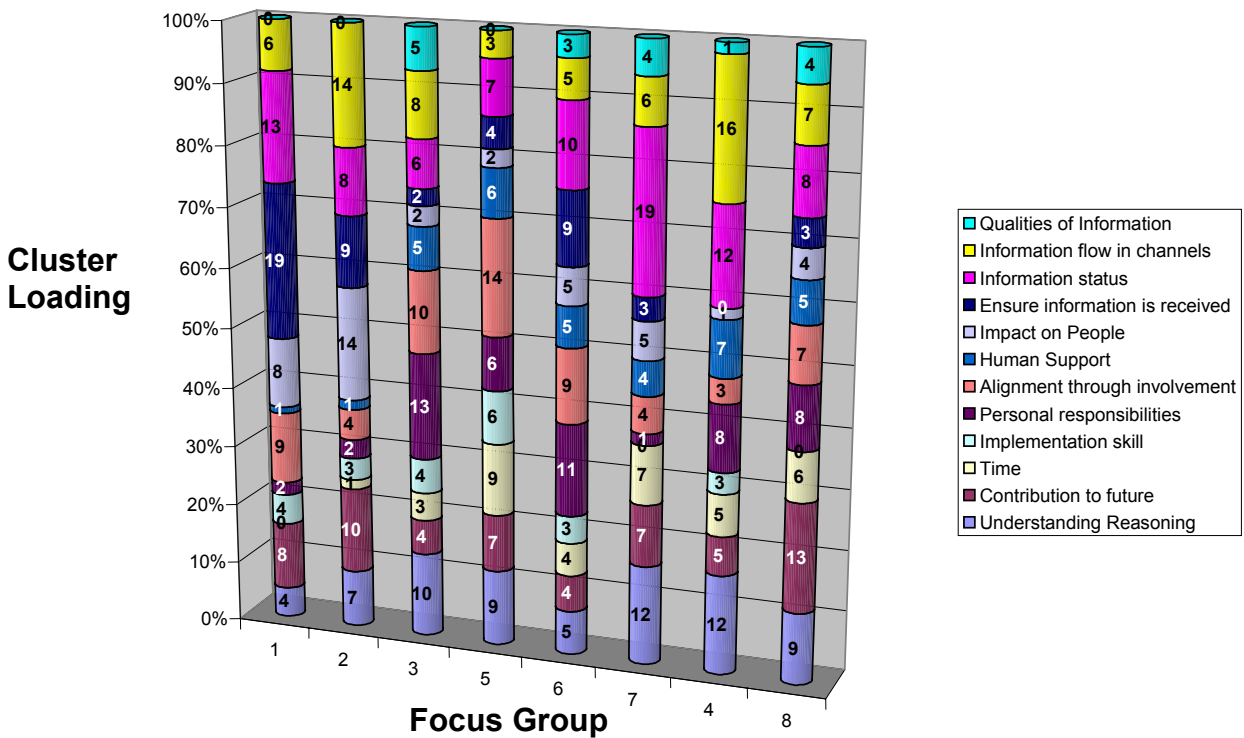
It is evident that groups that border each other in stratified systems theory show at some points in figure 4.12 similar patterns of information needs from the main cluster groups. Focus groups one and two cluster together at two points, resulting in plotting lines following similar paths. The plotting pattern of focus groups three, five and six resulted in a similar distribution of cluster loading at various points.

Figure 4.12: Main Cluster Groups



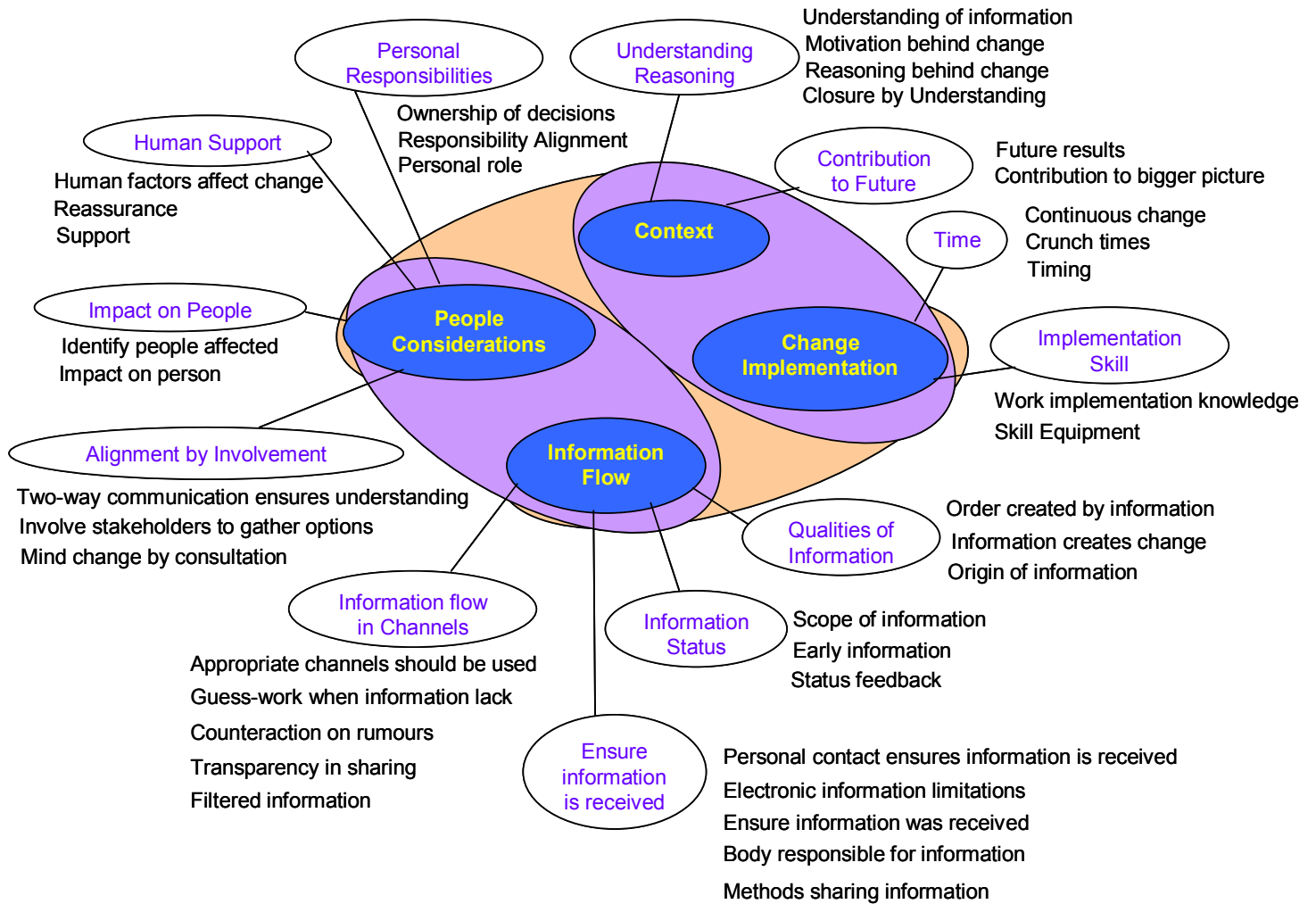
Various approaches to the main cluster groups indicate that there are patterns in the needs for information, based on focus group composition related to strata of cognitive complexity. Weights allocated to the main cluster groups for each focus group is illustrated in figure 4.13. Distribution of weights of cluster loading for focus groups one and two show similar patterns. Allocation of weights to focus groups three, five and six are similar on various aspects. The distribution of cluster loading is similar for focus groups seven, four and eight, but focus group eight has a more equal distribution among different clusters with the exception of implementation skill.

Figure 4.13: Main Cluster Groups – Focus Group Weights



Analysis of data in this section demonstrated that there is a clear case for distribution of information needs as collected from different focus groups. Focus groups are clustered according to cognitive complexity profiles. There is consequently a relationship between the distribution pattern of information needs during change and cognitive complexity. Information needs were clustered, forming a model of information needs as depicted in figure 4.14. Findings of this study indicate that people have similar needs, but there is a shift in focus regarding people's needs during change depending on the profile of cognitive complexity of the individual.

Figure 4.14: Information Needs in Change



CHAPTER 5

Summary, Recommendations and Conclusions

5.1 Summary

5.1.1 Introduction

The emergence of a framework, to provide people an experience of a state of flow, with their needs for information during change, is the basis for this research. Cognitive complexity as described in a requisite organisation or depicted in the study on stratified systems, is a theory in line with current developments in the area of integrated psychology. This study utilised the theoretical and validated research background which is currently practically applied in organisations by assessment methods like Career Path Appreciation and the Initial Recruitment Interview Schedule. The intent of this research is the identification of building blocks for provision of information for satisfaction of the individual needs on a micro level, while managing change and people's needs on a macro level.

The aim of the literature study was to provide insight into the true nature of the main concepts in the research topic. Findings of this study make it possible to identify where theory of information in change can be applied or linked to literature and application of the concept of cognitive complexity.

5.1.2 Theoretical Investigation

The theoretical investigation ranged from detail in the cognitive complexity section to a broad scope in the information and change sections. Writings on change abounds, ranging between practice and theory. Theory on communication as well as change, span a broad spectrum of topics, but these two aspects are conveyed in its intertwined nature in the literature study. Cognitive complexity theory is in itself a very complex subject matter. The literature study focussed on understanding concepts of cognitive complexity, but

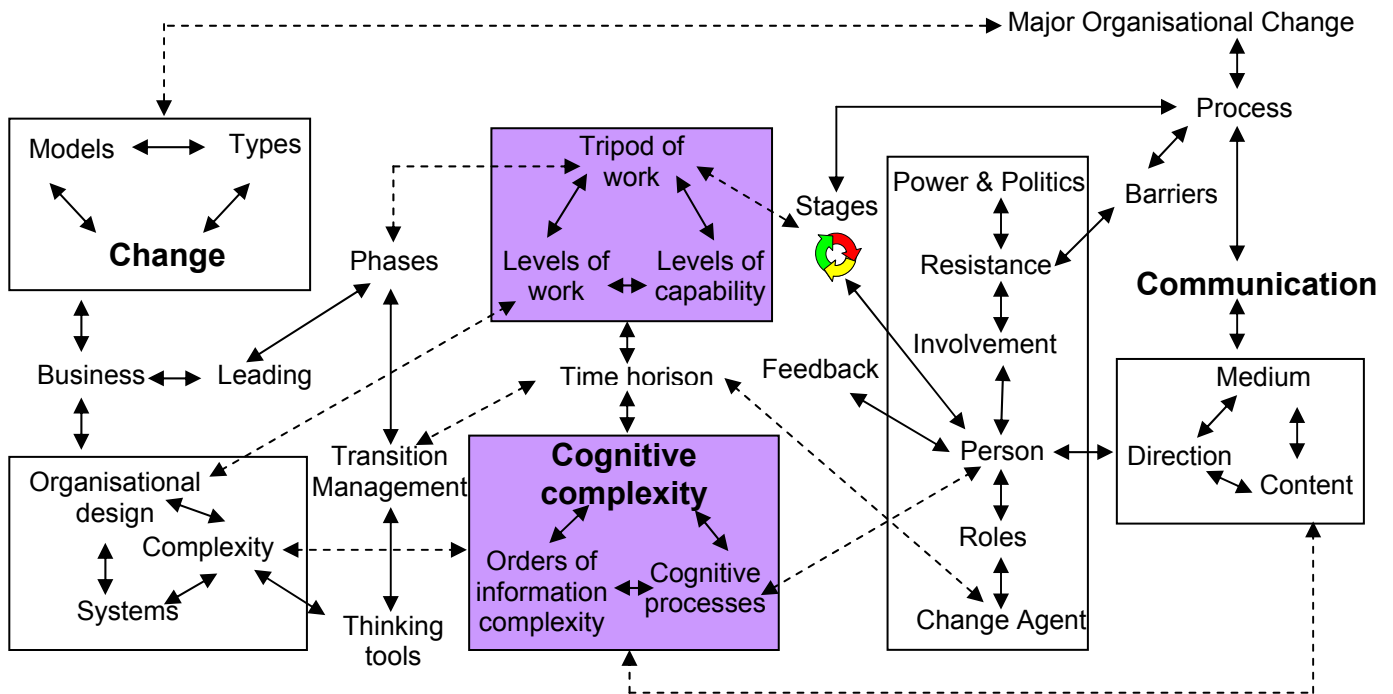
Cognitive complexity's influence on information needs in change

it is easier comprehensible when understood in terms of a unified theory in the human resources management discipline.

Cognitive complexity is expressed in the number and range of variables that individuals use in constructing their worlds. Variables used by an individual are described in the literature study by focusing on cognitive processes and orders of information complexity. Construction of an individual's reality is the expression of cognitive power and is measurable in time units (Bioss, 2000: 81). Time units and maturation bands place individuals on a continuum for measurement of their current as well as mode of cognitive processing of complexity. Cognitive complexity as measured for individuals, is mirrored in the levels of work where certain mental capabilities are required. Information processing and communication take place according to complexity strata in order to be effective in different levels of work. Communication as described by Jaques (2002: 58) is the conveying of information from one organism to another or to other organisms, hence the focus on communication in the information section of this study.

Leading change and therefore people in transition, requires pacing and managing changes in the workplace with cycles of change in individuals. There is furthermore a match necessary between roles and responsibilities of people and organisational design. The interplay between various elements of the research topic is depicted in Figure 5.1. It is evident that change, cognitive complexity and its various constructs are inextricably interlinked. The model in Figure 5.1 illustrates only a few interdependencies. Cognitive complexity contains a useful spectrum of concepts when it is used in linking change to communication. A person is equipped to deal with complexities in the business environment when cognitive complexity is used as framework to understand it. The tripod of work, as described in section 2.1.8, is for example a useful model to translate phases of change to individual stages of change.

Figure 5.1: A literature study perspective on cognitive complexity's influence on information needs in change



5.1.3 Qualitative Research Investigation

The investigation was explorative, qualitative, to identify building blocks for the research topic.

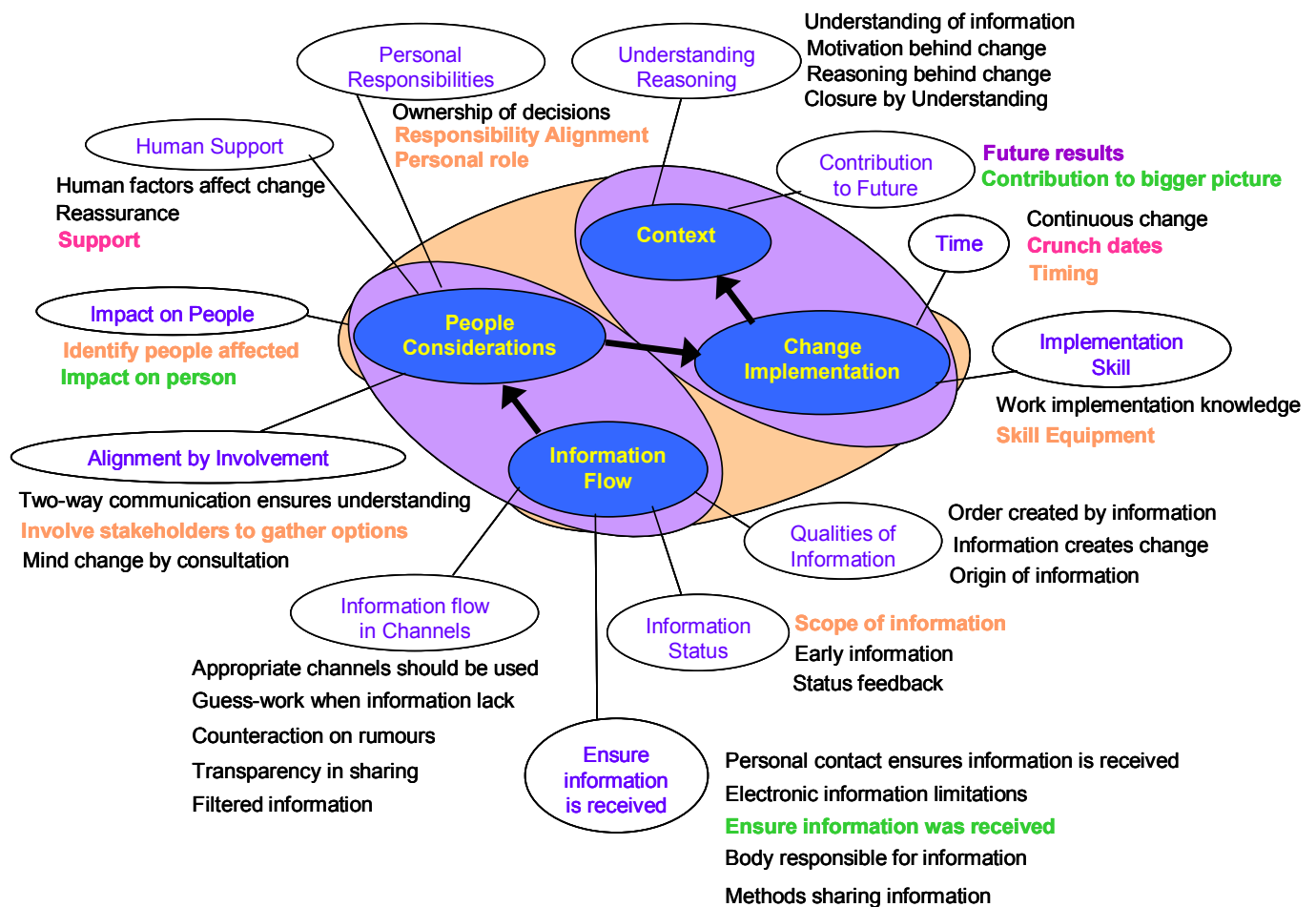
Focus groups with similar cognitive complexity profiles were selected. Profiles were obtained from a database in which individuals were assessed by CPA or IRIS. It was possible to conduct eight focus group sessions in three geographical regions.

Data was generated by transcription of the focus group sessions, as well as the written responses from the participants. Concepts were identified from the sessions. Concepts were clustered (as can be seen in Addendum F), until four cluster groups emerged from the main clusters.

Cognitive complexity's influence on information needs in change

The outcome of the clustering and patterns in the clusters is illustrated in Figure 5.2. Reported experience of the timeframe of change, confirmed the stratified nature of experience and involvement of individuals in an increase in time horizon (see section 2.1.2.7 for a description of time horizon). The arrows in Figure 5.2 indicate a gradual stratified change in needs during change. There are however needs which are universal across strata. There is consequently more of a shift in emphasis as groups progress through different strata of complexity.

Figure 5.2: Cognitive Complexity's Influence on Information Needs in Change



Quality groups, indicated in green in Figure 5.2, emphasised a need to ensure that immediate applicable information is received, especially if it has an impact

on the individual. Service groups, indicated in orange, were mostly concerned about involvement of those affected, as well as stakeholders. Involvement for service groups is linked to change implementation, by equipping people with skills and planning the timing of implementation. The practice groups' responses highlighted in pink is in the same clusters as the service groups, but with a different emphasis. Support for, and knowledge about critical dates are important for practice groups, from a managerial perspective, to sell change. An understanding of reasoning of change enables people in practice to manage better within the strategic framework. Knowledge about the company's high level strategy will enable the strategic development group, indicated in purple, to plan for future results. Preservation and transfer of knowledge about the game of business is important to manage effectively in a context of many uncertainties.

It is evident that there is a need to apply information on the various levels of work. Application of information by certain groupings of people according to cognitive complexity, is consequently an important aspect to consider when information is provided.

5.2 Recommendations

A quantitative falsification test of the research findings to a broad population will contribute in refining and testing the robustness of the model and its clusters on cognitive complexity's influence on information needs in change.

It may be necessary to include a literature model in a qualitative study on the research topic. Elliot Jaques' managerial information and decision support systems, which are described in Table 2.1.2, need evaluation as a tool to provide information in change.

The focus groups for the complexity level of practice were very small in this study. This grouping may need refinement, in terms of more information that will increase the saturation level of understanding this group's needs, which will

serve as building blocks for a theory on the research topic. The current framework may be altered by research on higher levels of cognitive complexity's needs for information in change, which is not included in this research.

The strength of importance of cognitive complexity in relation to other psychological constructs, need to be investigated when determining people's needs for information in change.

It will be valuable from a change management perspective to test the findings of this research in a business context. Evaluation of differences between the following will assess the value of the model:

- in a focused approach, by providing information according to complexity levels' prominent areas of need
- in a general approach, by applying all elements of the model equally to all groups of complexity

5.3 Conclusions

Information needs encompasses much more than information flow. There is a hierarchy of information needs, increasing according to the application areas of people of higher cognitive capability.

A general framework of people's needs for information during change was constructed during this research. Four building blocks or clusters form the basis of people's information needs. The building blocs are: information flow, people considerations, change implementation, and context. The framework from the research findings in Figure 5.2 corresponds to various elements from the literature study as illustrated in Figure 5.1. People have much in common concerning information needs, irrespective of cognitive complexity.

Cognitive complexity has an influence on people's needs for information during change. There are variations in importance of information needs for individuals

in the model, according to levels of cognitive complexity. The different strata of cognitive complexity correspond to theory that describes different levels of work according to a requisite organisation (see sections 2.1.6 and 2.1.7 for explanations on the levels of capability and the levels of work). It is evident that the shift in areas of importance in the provision of information is related to the intent to use the information.

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