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These updates bring the structure of Searl Technology into the realm of reality through systematic progress the objective shall be achieved.

There is a class of occasions in which entities enduring in time behave as if subject to both interaction and chance and yet remain wholly passive in their inner and outer relationships.

In each and every domain this dogma has proven to be untenable, and within the last century has been abandoned everywhere, either tacitly or overtly.

The epoch of the absolute has ended and that of relativity has begun.

Nevertheless, we are still very far from having grasped the implication of our new world outlook and therefore, in nearly every field, we are the uncomfortable position of those who try to sit between two stools.

Unable resolutely: to abandon all our absolute expectations, nor able yet to enter fully into the ways of thinking that belongs to the new epoch.

We must put aside the search for the absolute; not as a search beyond our present powers, but rather as one inherently misguided.

We have not much to make a confession of failure as to admit that we have tried to do should never have been attempted.

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There is, in any case nothing to be lost for absolutism has been dead these hundred years, and of those who still remain loyal to absolute conceptions; whether in religion, in science, or in politics; few have either faith in their profession or hope in their practice.

If it is impossible for us to make final or absolute judgments upon any subject whatsoever; even upon the forms of thought or logics that we shall adopt as a test of significance; then everything is to be regarded as uncertain, even uncertainty itself.

If uncertainty is adopted as a canon of thought, it again must not be taken as final.

Nevertheless, we cannot hope to progress unless we make some assumptions as to that which is beyond our immediate experience of this present moment.

The simplest and most plausible assumption we can make is that we men with our equipment for apprehending the world, are a fair sample of the world we apprehend.

If we discover that accident and uncertainty are never, absent from our own experience, and then we reasonably suppose that they are present everywhere and in everything.

To exist means to be what one is.

It also means to be oneself in the environment that is not oneself.

The boundary between self and not self is the condition of existence.

However, it is also its limitation.

In order to exist every entity is called upon to resist the encroachment of its environment.

Again, existence may be looked upon as the balance of persistence and decay.

Living and dying are the weft and the warp of all our experience.

In so far as they stand in opposition, every entity becomes involved in a process of adjustment between its own needs and the pressure of its environment.

Sensitivity is the condition of this adjustment.

The greater the sensitivity the greater the range of adjustment that is possible.

This sensitivity can be regarded as a factor of reconciliation between the forces of endurance and decay.

Consciousness is the awareness that accompanies sensitivity.

We can thus measure the gradation of being by the degree of sensitivity of an entity to the forces that act upon it.

Consciousness can then be defined as the condition of independent existence.

Searl understands that the consciousness of man have been programmed by education, and sensitivity been damped by such doctrine.

Searl knows that since man appeared upon planet earth anyone who suggested anything outside of normal acceptance was insane, whose reaction delay man's progress.

Searl plans to set up the SEARL TECHNOLOGY LIMITED has to have a number of departments to function by employing skill staff within such departments projects can be evaluated and this is his approach to this problem.

INTRODUCTION:

The subject of this Document Searl terms it as ***ORGANISATION THEORY***, everything done by men – women in the business world has to be planning well in advanced of attempting to implement such a business; therefore, Searl is no exception to this requirement.

Searl understands from hands on experience that he must stand back and think as to what these company objectives shall be.

This comprises an examination of the fabric of organisation within which all business activities are pursued.

As such, it is intended as background material against which other documented specific subject areas in Searl's plans may be put into context.

Searl trust that it serves to remind his staff and future investors that the efficiency and effectiveness of functions and people can be influence by the nature of an organisation's structure, its control mechanisms and the values and aims which it incorporates.

Searl aim is to identify the important components, which comprise a business organisation and to enhance a member of the staff and workforce understanding of the relationship between them and their impact not only on the efficiency of the business but also on its ability to function effectively as a social unit.

In particular, Searl in this document focuses on people, who represent an important resource and investment from which a business endeavours to obtain a satisfactory rate of return.

Equally, by virtue of his / her membership of Searl International Space Research Consortium complex an individual also seeks a return, namely, the satisfaction of certain of his needs both economic and social.

In extreme cases, failure to meet either or both may result in the business failing to survive.

Individuals perform their roles within a configuration of structural and control mechanisms.

Their value systems, attitudes and subsequent behaviour stem from many sources but are most certainly influence by their organisation membership.

Searl intends to present his structure concept of his company in sections as documents to keep files small and in this first document, he examines various approaches to the study of organisation from his own experiences in charge of a workforce.

His study of organisations, assessing the contribution of organisation theory, tracing its development from classical theory through to a systems perspective and assessing the impact of each theory on organisation development.

APPROACHES TO ORGANISATION STUDIES:

In basic terms an ***organisation*** exists where two or more people unite together and co-ordinate their activities in order to achieve a set of common goals.

A product of the Industrial Revolution, complex business organisation as Searl Technology Limited is a relatively new phenomenon.

Theories about organisation behaviour began to develop during the early and middle part of the twentieth century.

Organisation theory seeks to understand, explain and predict human behaviour in organisations.

Theory should never be divorced from practice.

Searl knows that it forms the basis of management decisions on how to act in certain situations.

A manager's understanding of the past will help him / her to predict and decide upon some future course of action.

Searl attempts to improve his understanding of human activity in organisations have come from both managerial practitioners and academics representing a wide range of disciplines.

Particular groups have emphasized different aspects of organisations, including economic, technical, social, psychological and structural factors.

Searl is intending to summarize here the major developments in theoretical thinking which will be referred to in a later document.

Searl understands that the developments in theoretical thinking can be traced historically and classified under three headings:

1. *Classical Organisation Theory.*
2. *Human Relations School.*
3. *Systems Theory.*

CLASSICAL ORGANISATION THEORY:

This group of theorists to Searl's knowledge began writing in the early part of the twentieth century.

They were, with the exception of Weber, experienced practitioners seeking new and better ways of managing larger, more complex organisations produced by the Industrial Revolution.

Many of the concepts and principles they developed formed the foundation for further theoretical advances and still influence managerial thinking today.

Three major strands can be identified within the classical theory

1. *Scientific management*
2. *Formal organisation theory – sometimes referred to as administrative theory.*
3. *Bureaucracy.*

SCIENTIFIC MANAGEMENT:

Owes its origins to Taylor: who, rather than create a science of management, produced a number of guidelines for managers to replace the existing rule of the thumb methods.

The ideas of hierarchical structure and division of labour – breaking the production process down into numerous simple tasks – were becoming well established and Taylor focused his attention on how managers could control and co-ordinate the performance of tasks so as to improve organisation efficiency.

Hence, scientific management is sometimes referring to as task management.

The most efficient methods of performing tasks were studied using scientific methods: such as time and motion studies; to induce individuals to adopt these methods.

Taylor introduced incentive payment schemes such as payment by result.

Organisations could therefore maximize their output levels as efficiently as possible while at the same time workers could increase their earnings levels.

It was therefore believe that workers would accept scientific methods since what was good for the company was clearly also to their advantage.

In the interests of efficiency: management would also have to pay careful attention to the selecting of individuals and their training; which concerns Searl in respect to his organisation plans.

Searl accepts that such an approach to the organisation of work was base on a rather *mechanistic and economic view of human nature*.

This Searl agrees tends to conjure up well-known images of people working like cogs in a machine.

Later researchers showed that workers did not always behave in an economically rational way, which Searl knows too well is a FACT.

Clearly, as Searl see it that where it appeared to be to their advantage to maximize output, group norms actually restricted output levels.

Clearly, the mechanistic, economic view of man failed to take account of how people at work were affect by social variables like informal group behaviour.

Worker resistance as Searl witness it was also evident from the way in which workers often manipulated the results derived from the application of scientific methods and trade unions questioned the distribution of the gains achieved by increased efficiency.

Scientific management has been describing as a *micro approach* to the study of organisations – how management could optimize performance at the shop floor level.

The other two strands of classical theory, formal organisation theory and bureaucracy, are view as more of a *macro approach* dealing with structure and developing principles applicable to higher authority levels in the organisation.

FORMAL ORGANISATION THEORY:

Searl accepts that this has its origins in the writings of practitioners like Fayol.

They propounded that organisations could be manage more efficiently if certain universal principles were applied.

These principles provided the guidelines for formal organisation structure and included the following:

1. SPECIALISATION:

By functions and division of labour – tasks will be sub-divided and employees performing those tasks shall be allocating to functional departments.

2. SCALAR PRINCIPLE:

The chain of command was a line of authority moving downwards through **SEARL TECHNOLOGY LIMITED** organisation structure.

3. UNITY OF COMMAND:

Searl's idea of employees having to report to one boss.

4. SPAN OF CONTROL:

Determined by the optimum level of effective supervision which, though variable, was considered

To be five or six subordinates per supervisor.

5. VERTICAL COMMUNICATION:

The chain of command is the official channel for communication, within Searl Technology Limited.

6. MINIMUM AUTHORITY LEVELS:

Reducing the number of levels of authority: thus making communication, control easier, and hence improving efficiency.

7. LINE AND STAFF DIVISION:

Line departments are to have direct responsibility for decisions relating to the production of a good or service, and staff departments, e.g. personnel, are to provide specialist advice and services to assist the line departments.

Searl appreciate that the formal organisation theorists over emphasized structure at the expense of sociological and psychological factors relating to human behaviour.

Agree they shared with scientific management thinkers the assumption of rational economic man.

Later researchers also questioned the notion of universal panaceas to problems of organisation structure.

Other factors in the organisation setting may have an important influence on structure which they overlooked, for example, Woodward's work – 1965 – on how different types of technology – small batch production, mass production, continuous process – might affect organisation structure which Searl appreciated in the 60s.

BUREAUCRACY:

Searl accepts that this forms the final strand of classical theory.

This was based on the work of sociologist Weber who depicted the bureaucratic model as the most appropriate form of organisation for large scale, complex concerns like those that the **SEARL TECHNOLOGY LIMITED** is being planned.

The bureaucratic model as Searl see it was base on the notion of **rational legal authority**, that is, authority, which employees freely recognize as inherent in the manager's position in the hierarchical structure.

Searl also understood that this bureaucratic structure also encompassed the scalar principle, division of labour and functional specialisation to which **SEARL TECHNOLOGY LIMITED** requirements is necessary.

However, along with rational legal authority, bureaucracy emphasized **RULES** and **PROCEDURES**.

Each position in the hierarchy had its duties and rights carefully defined and a system of procedures determined how authority could be exercise.

The functioning of the organisation did not depend solely upon the knowhow of individuals who obviously could join and leave – though it should be note that their loyalty was foster by promotional opportunities based on merit.

Knowhow instead was largely embodied in the rules, procedures and written records that always remained within the organisation.

Such problems as this that Searl has to balance are base upon getting the chemistry together to win.

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Bureaucracy has many of the characteristics of the other strands of classical theory: a mechanistic view of man, the prevalence of hierarchy and authority, and the neglect of social and psychological influences on the behaviour of people in organisations has been one of Searl's main objectives.

Many studies made since Weber devised his model have highlighted the dysfunctional consequences of bureaucratic organisation.

Searl is aware of Merton – 1940 – showed how compliance with rigid rules and procedures could become a goal in itself rather than the achievement of actual organisation goals.

Most people claim to have experienced to some degree problems of red tape in bureaucratic structures.

Searl understand that Burns and Stalker – 1961 – did not question the internal functioning of bureaucratic organisation, but rather their *goodness of fit* to the economic and social environments confronting them.

They classified organisations into the broad categories of *mechanistic* and *organic forms*.

The rigidity inherent in bureaucratic structures was consider more appropriate to mechanistic forms of organisations in which decisions were largely of a routine nature and their environment a relatively stable one.

However, in organic forms of organisations, face with a rapidly changing environment, which required non-routine and often innovatory decisions, bureaucracy, was considered too inflexible.

In their search to improve organisation efficiency, classical theorists concentrated on the analysis of tasks and formal organisation structure.

Human behaviour in organisations was seen as being non-problematic but Searl knows different from hands on experience something well to remember.

They considered employees would behave in a rational economic manner and operate within the formal organisation structure; Searl will never take that for granted from his own experience in the workplace.

The weakness of these theories in explaining human behaviour in reality was a gap, which the next group of theorists attempted to fill.

This major stage in the historical development of theory came from a group of academics in the social sciences who were primarily concerned with the social and psychological influences upon human behaviour in organisation, as Searl has done likewise.

THE HUMAN RELATIONS SCHOOL:

Often considered synonymous with the Human Relations School are the *Hawthorne experiments* carried out by Mayo and associates in the 1920s and 1930s.

These experiments examined aspects of the work environment – length and spacing of rest periods, and physical surroundings – to see how they affected employee productivity.

According to Searl knowledge, the first experiment examined the effect of varying illumination levels on worker performance, which is just one of Searl's problems within his planned organisation.

The results were the beginning of a number of puzzling findings.

Where output levels were, expect to decline, they were in fact noticeably increased.

All these findings Searl must consider within his planning of the company structure being so complex.

Experimental methods were then improved upon and other variables thought to influence performance were introduced.

A small group of female operators assembling telephone relays were isolated as an experimental group and subjected to lengthy spells of observation.

Researchers measured performance levels as they changed the working conditions, such as the length of the working day, frequency and length of rest periods, and the quality of lighting.

Again, a surprising result ensued: irrespective of the working conditions, output levels increased.

Even after returning to pre-experiment conditions output levels remained high, sickness, and absenteeism fell.

A further experiment with males in the bank wiring room showed how individual payment schemes were influenced by group relationships and how groups established their own rules on levels of output.

It was evident from the unexpected results that output levels were not merely a function of strict supervision levels, incentive payment schemes or physical working conditions, but rather that aspects of the *social system* had to be taken into account.

The bank wiring room experiment illustrates the importance of group relationships and group attitudes.

In the earlier experiments, it can be concluded that it was not so much the change in the physical environment, which caused the change in performance levels but the fact that the researchers were showing interest in the employees subjected to the study.

This social effect is sometimes referred to as the *Hawthorne effect*.

Which, of course is precisely what Searl had expected from such experiment.

This group of academics then went on to demonstrate the significance of informal organisation structure on the behaviour of individuals and work groups, which operated alongside, and sometimes in conflict with, the formal organisation structure.

Although the Hawthorne experiments have not been without their critics, they do appear to have prompted the beginnings of a theory of human behaviour, which highlights the social system operating within an organisation.

Areas such as motivation, morale, democratic leadership styles, inter-personal relations, communications and group dynamics were found to be among the factors influencing productivity and worker satisfaction, which Searl knows from his own experience on the factory floor to be true.

While worker representatives increasingly viewed the human relations approach as a subtle form of managerial manipulation, Searl is increasingly prepared to accept methods, which offered an opportunity to achieve both better productivity levels and a more satisfied work force.

In the post war period the Human Relations School was a fore runner of a new school of thinking comprising behavioural scientists and sometimes referred to as the *Neo-Human Relations School*, which Searl fully understood as to why it got such a term.

To Searl knowledge, this included people like Likert – management styles.

Argyris – individual well being.

McGregor – employee motivation.

Herzberg – job enrichment.

Who all developed theories on the relationship between individuals and the organisation and who will be considered in greater detail in later documents of this series.

When Searl taking stock of contributions to organisation theory up to the 1950s and 1960s, the time where Searl was getting his teeth into problems relating to human behaviour, it can be seen how classical theorists stressed task management and organisation structure while the Human Relations School emphasized the social and psychological influences on human behaviour.

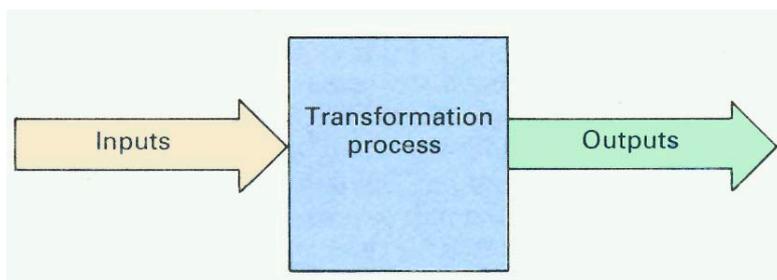
Other writers were also paying attention to the technological influences on behaviour and the economic and social context of organisation – likewise Searl has to balance the scales in the same light.

Brief mention has already been made of the work of Woodward and Burns and Stalker.

The scientific approach of Taylor also formed the basis for a more sophisticated application of science to the management process by operational researchers, economists and management scientists.

The problem was one of attempting to find a conceptual framework in which to integrate all these different elements this became the major objective of system theory.

Environment, e.g. Social, Political.



Environment, e.g. Economic, Technical.

Figure 1. The organisation system.

SYSTEMS THEORY:

The first attempt known to Searl was to integrate some of the diverse elements was by a group of researchers from the Tavistock Institute of Human Relations who adopted a **Socio-technical systems** approach.

They believed that human behaviour in organisations occurred within a socio-technical system.

Evidence from a number of experiments led this group conclude that organisation behaviour was a function of both technical and social factors.

Both these factors exist **independently** of one another but yet are **interdependent**.

For the system to perform optimally each factor has to be taken into account.

If one factor was optimised while the other was ignored the system itself would not perform at optimum levels.

Though not evident from the title, this approach also took into account the economic factors in an organisation environment.

By now you should be getting an insight of what Searl has to do to get his sums right the first time.

DATE	THEORY	APPROACH*
PRE 1930s	Classical Organization Theory: (1) Taylor's Scientific Management (2) Formal Organization Theory (3) Weber's Bureaucracy	Emphasis on task management (1) and formal organization structure (2 & 3). Developed principles closely linked to hierarchy and authority in organizations. Rational economic view of man.
1930s & 1940s	Hawthorne Experiments: Development of Human Relations School.	Experiments highlighted the social and psychological influences on organization behaviour. Emphasis on interpersonal relations, communications, leadership style, motivation, morale. Social view of man.
1950s & 1960s	Neo-Human Relations School	Further development of Human Relations School by behavioural scientists like Likert, McGregor, Herzberg. Self-actualizing man approach – importance of intrinsically rewarding work.
Late 1960s onwards	Development of Systems Theory and the Contingency Approach.	Organization behaviour viewed as the outcome of the interaction of a number of variables, e.g. economic, social, psychological, structural, technological which though independent are also interdependent. Variables comprise the organization system. Complex view of man.

Figure 2. Historical development of organisation theory.

An experiment, which illustrates the application of the socio-technical systems approach, is Trist and Bamforth's study – 1951 – into methods of underground coal cutting.

Technical change introduced a mechanised system to the process of coal extraction called the longwall method, which replaced a group working system.

Under the latter system, the group allocated the tasks – preparing, cutting and loading – among themselves.

The longwall method introduced a shift system whereby each shift specialised in a separate task.

Therefore, technical change, introducing specialisation, cut across well-developed group relationships and work methods.

Hence, the technical factor may have been optimise but since the reciprocal effects of such a change on the social factor had been ignore, the expected improved performance levels did not occur.

The solution, according to the socio-technical systems approach, was to account for the social factor by restoring group-working methods while also retaining the shift system.

With this so-called composite longwall method productivity, increased and possible indicators of worker dissatisfaction, such as the level of absenteeism and sickness, noticeably decreased.

The application of the system approach to the *integration* of all factors affecting behaviour in organisations was influence by similar theoretical developments in the physical, biological and social sciences.

General systems theorists, however, did not restrict themselves to the social and technological factors operating in the work situation.

As has already been mentioned, the organisation structure must also be taken into consideration as well as the environment in which the organisation operates.

Therefore, if **SEARL TECHNOLOGY LIMITED** is viewed as a system, it is consider to be made up of a number of sub-divisions or sub-components, for example, the technical, sociological and structural elements, while at the same time it is also affected by an environmental suprasystem which comprises economic, social, political and technological influences – Figure 1.

As already seen in the social-technical systems approach, each sub-component of the total **SEARL TECHNOLOGY LIMITED** system is independent yet is itself dependent on the others.

Hence, the systems approach provides a conceptual framework in which the interaction of the component parts can be understood.

The most important factor to note is that although **SEARL TECHNOLOGY LIMITED** appears as an aggregate of sub-components, as a system it has a totality of its own with a separate identity – in other words, *it is more than simply the sum of its constituent parts.*

Systems are either closed or open depending on the degree of interaction between the system and its environment.

CLOSED SYSTEMS:

Tend to have rigid, well-defined boundaries, which limit interaction with the environment.

SEARL TECHNOLOGY LIMITED is generally consider to be an *open system*, having a dynamic relationship with its environment and concerned with the transformation of inputs – labour and capital – into outputs – goods and services.

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For *SEARL TECHNOLOGY LIMITED* to achieve a state of dynamic equilibrium with the environment, continual adjustments have to be made within and between its sub-components.

Searl accepts that systems theory has been criticised for treating *SEARL TECHNOLOGY LIMITED* as a separate personality, with *SEARL TECHNOLOGY LIMITED* taking actions and having goals rather than the individuals who make up *SEARL TECHNOLOGY LIMITED*

There has been a tendency to ignore the action of individuals in the *SEARL TECHNOLOGY LIMITED* and to concentrate on *SEARL TEHNOLOGY LIMITED* as a separate entity.

In reaction to this, some academics have adopted an approach called *Social Action Theory, which* studies behaviour in an organisation purely from the subjective views of the individual members within that organisation.

Another criticism aimed at systems theory is its level of abstraction.

Managers could quickly see the applications of the Human Relations School, the behavioural science theories and the classical theories, but they could not readily recognise the significance of systems thinking.

In an attempt to make systems their more relevant to *SEARL TECHNOLOGY LIMITED* problems confronted by managers, the *contingency approach* was developed.

The contingency approach rejects earlier classical ideas of universal panaceas to solve organisation problems.

Instead, drawing on the content of systems theory: it is argue; that what is optimal for one organisation, for example: in terms of organisation structure, will be a function of that particular organisation's context.

One organisation's context may vary from another's in terms of factors already mention in systems theory, for example, the economic environment – product and labour markets – or the technology utilised.

It is only when the characteristics of *SEARL TECHNOLOGY LIMITED* context are identified and inter-relationships analysed that optimal solutions to specific problems can be discovered and acted upon.

SUMMARY:

The various approaches to the study of human behaviour in organisation have been traced historically – Figure 2.

Three categories of approach have been identified: Classical Theory, Human Relations School and Systems Theory.

Although presented as an historical development this does not mean that ideas introduced in earlier decades are not relevant today or no longer applied by managers; for example, classical theorist's ideas on hierarchical structures in organisations are still dominant to Searl understanding.

In addition, researchers and writers, particularly sociologists and psychologists, still concentrate on extending our understanding of particular aspects of organisation behaviour.

While theories from one particular area of study may be very useful in helping our understanding of organisation behaviour, it is clear that single factor explanations are unlikely to reflect the complexities of reality.

Searl accepts that systems theory could provide a useful framework for analysing the complex inter-relationships between variables operating within *SEARL TECHNOLOGY LIMITED* and *SEARL MAGNETIC LIMITED*.

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In this first document of this set of documents, I cover really, what is an introduction to the whole set to come.

It updates the past issues that has been released over the years, and lay the ground for future progress to be made in the developments being investigated.



The success of any new development is the teamwork that goes behind it.

This document released by authority of:



Prof. John Roy Robert Searl. Head of R&D Human studies.