Complexity Sciences

The Unicist Standard
for Adaptive Systems

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Contents

About Adaptive Solutions

The available IT technologies made the development of adaptive systems meaningful. The objective of building adaptive systems is to integrate software, hardware and peopleware in adaptive work or business processes to assure the quality of the results produced.

The development of the adaptive IT technology became possible because of the discovery of the unicist laws of evolution, the object driven organization that emulates the organization of nature and the drivers of human behavior that allow designing the necessary peopleware.

Before the existence of adaptive systems, the solution was fully focused on the efficacy of individuals, which increased the responsibility of the person who was doing a job. This forced them to consider all the details of the feedback from the environment which increased the probability of errors.

The catalyst of an adaptive IT system is its capacity to learn from the feed-back to improve its adaptive behavior. The entropy inhibitor of the system is given by its capacity to learn to ensure conjunctural adaptiveness.

Adaptiveness is based on the existence of drivers that make it possible. There are different levels of adaptiveness beginning with the most basic and ending with the most flexible. The levels of the adaptive drivers are the following:

1) There are **analogical drivers** that are based on the recognition of patterns.

2) There are **rule based drivers** that include the preexisting and add rules that correspond to the activity.

3) There are **empirical drivers** that include the preexisting and add empirical information obtained using mathematical models.

4) There are **objects based drivers** that include the preexisting and add concept based objects as intrinsic adaptive systems.

Unicist Ontogenetic Map of Adaptive IT Architecture
The Unicist Ontology in Unicist Standard Language
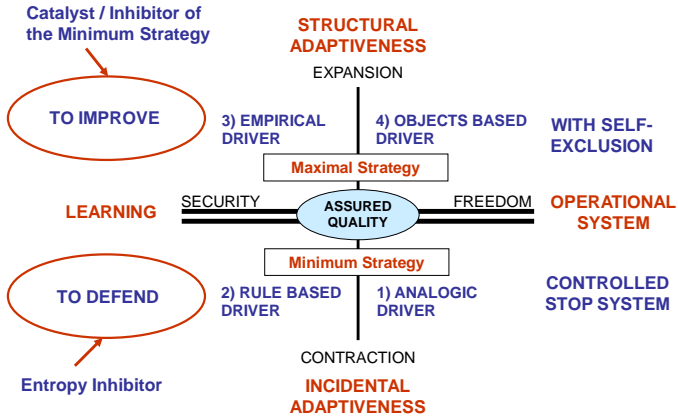
The integration of the adaptive aspects with the operational and administrative aspects is necessary in order to make user oriented information systems.

The level of adaptiveness of a system has to be designed according to the characteristics of a work process. Administrative and operational systems can be transformed into adaptive systems by adding and integrating an adaptive interface.

Difference between Adaptive and Administrative Solutions

An analogy will explain the difference between both. An administrative system is a simple procedure that uses forward-chaining thinking approaches:

1 + 1 = 2 is a simple administrative system that is solved by knowing how the adding process has to be done.

On the other hand, adaptive systems are complex. Their elements are interdependent and the only observable behaviors are their results:

2 = ∞ alternatives. This means that an individual has to find the best solution that achieves the result. This implies working with backward-chaining thinking approaches.

Backward-chaining thinking implies being able to think from the end to the beginning. Consider a mounting line. It is the capacity of an individual to decompose the final "product" into its components.

Quality Assurance: The Unicist Standard

The Unicist Standard was developed to sustain the application of the Unicist Logical Approach to Adaptive Systems Architecture and to the building of Unicist Business Objects.

The researches developed at The Unicist Research Institute allowed managing the unified fields of human complex adaptive systems in a reasonable, understandable and provable way.

The discoveries of the ontogenetic intelligence of nature, the anthropological invariables and their evolution, the human ontointelligence and the double dialectical behavior made the research & development and management of adaptive systems possible.

The Unicist Standard defines the ontogenetic maps that have to be followed in an adaptive system in order to structure it and achieve the results that have been defined as possible.

Unicist Ontology and
Unicist Ontological Algorithms
to build Objects

The Unicist Standard established the norms to integrate the knowledge of unicist ontological algorithms with systemic cause-effect knowledge to develop logical solutions in fields where empirical approaches were dominant.

Unicist Ontology of the Unicist Standard for Adaptive System Research
in Unicist Standard Language

ADAPTIVE SYSTEMS
RESEARCH STANDARDS
EXPANSION

FUNDAMENTALS
(ONTOLOGIES)

ADAPTIVE SYSTEMS
RESEARCH

HUMAN ADAPTIVE
SYSTEMS RESEARCH

EXPERIENCING

Maximal Strategy

SECURE
KNOWLEDGE

SECURITY

UNICIST
STANDARD

FREEDOM

RESEARCH
STANDARDS

Minimum Strategy

TECHNICAL-
ANALYTICAL

CONTROL SYSTEMS
RESEARCH

OPERATIONAL
SYSTEMS RESEARCH

OBSERVING

CONTRACTION
SYSTEMIC SYSTEMS
RESEARCH STANDARDS
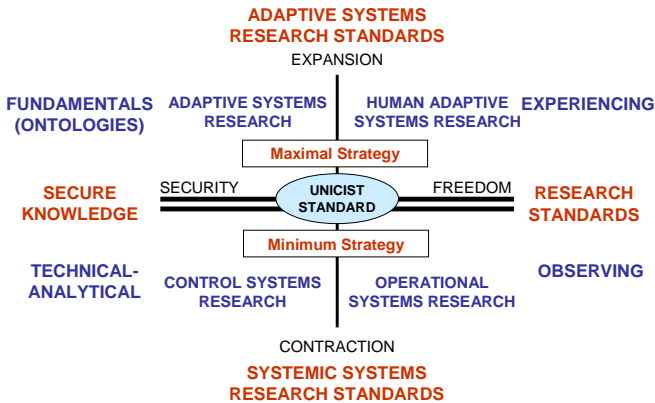
This changed the paradigms to deal with complex adaptive systems, allowing saving usually more than 30 % of the energy consumed producing results.

The research on complex adaptive systems, which led to the Unicist Standard, was developed using the unicist ontological research methodology based on the Unicist Ontogenetic Intelligence of Nature.

It allowed structuring the fundamentals of specific systems, their taxonomies, the development of their ontological structures, their Unicist Ontological Algorithms and their operational objects and methods.

This enabled the development of "Unicist Objects" to be used by individuals and institutions.

Nature, as a paradigmatic complex adaptive system is organized by objects.

*Every object has its ontology and
every unicist ontology has its object.*

Unicist Ontology of the Adaptive System's Structure
in Unicist Standard Language

(*) Unicist Thinking allows emulating nature and makes the integration of the two dualistic approaches possible.

The numbers 0 – 1 – 2 – 3 represent the steps (rules) of the Unicist Ontogenetic Algorithm.

Processes
Purpose (*)

3   0

Adaptive System Structure

Supplementation

Complementation

1

Objects
Maximal Strategy
Active function

2

Ontologies
Minimum Strategy
Energy conservation function

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These objects of nature establish the evolution's point of reference that can be approached with the Unicist Theory of Evolution which is based on the discovery of the Ontogenetic Intelligence of Nature.

This knowledge allowed for the building of the Unicist Ontological Algorithms. Algorithms are precise rules specifying how to solve some problem. A Unicist Ontological Algorithm defines the logical steps to be followed to make complex processes work.

The Unicist Ontological Algorithms are presented in Unicist Standard Language which is a logical semantic structure in natural language to deal with logical solutions for complex adaptive systems.
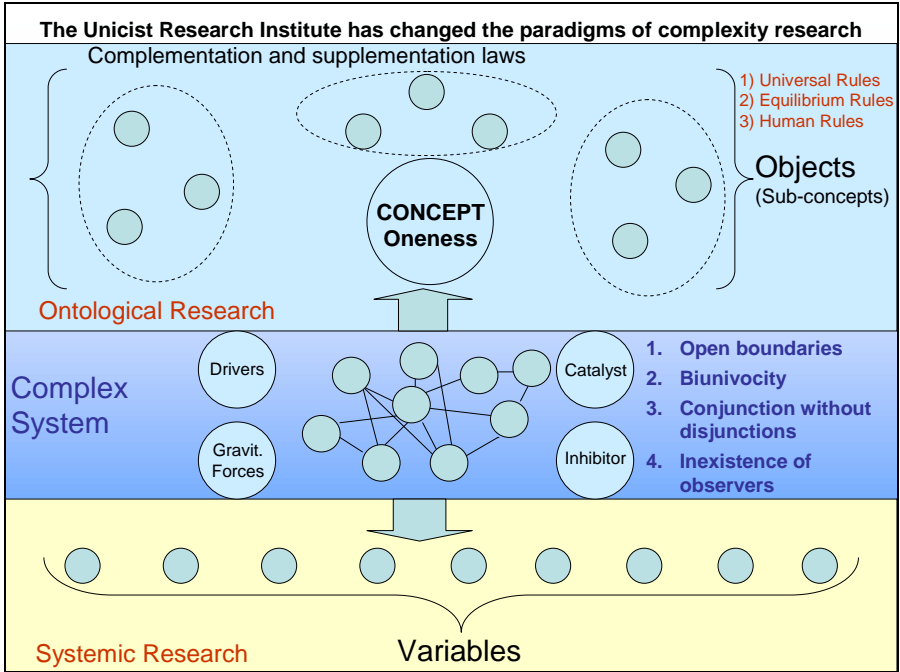
The Unicist Research Institute changed the paradigm of the complexity research focused on human individual, institutional and social evolution.

The Unicist Standard for complexity research was developed based on the characteristics of adaptive systems considered in their complexity, some of their characteristics are:

1) Open boundaries
2) Biunivocity of its components
3) The existence of conjunctions without disjunctions
4) The inexistence of observers

The consequence was the substitution of an epistemologically invalid approach to complex problems, dividing them into variables, which are inexistent, by a unicist ontological approach driven by objects, in

which objects are integrated as subsystems in adaptive systems, following the rules of the ontogenetic intelligence of nature.

The unicist ontological research approach allowed researching adaptive systems in the oneness of the unified field they define, avoiding the development of hypothetical solutions based on inexistent cause-effect relations.

The unicist ontological research model enabled the definition of the field of possibilities of an adaptive system and to enter then in the field of probabilities of the occurrence of events.

This gave birth to the Unicist Standard to research and deal with human adaptive systems.

The Unicist Ontogenetic Algorithm
(to develop Adaptive Systems)

The Unicist Ontogenetic Algorithm defines how empirical approaches are transformed into logical solutions.

The discovery of the unicist ontogenetic intelligence of nature and the ontological research done on complex adaptive systems allowed the development of the Unicist Ontogenetic Algorithm.

Following the unicist algorithm in businesses, allows transforming empirical approaches into logical solutions. The unicist ontogenetic algorithm defines the taxonomy of an activity.

The Unicist Ontogenetic Algorithm of evolution

When an individual is in an evolution cycle there is no risk of failure. The individual makes all the necessary actions to ensure evolution. Human efficacy depends on the fundamental driver of individuals.

Efficacy requires fallacious free actions. The research on human evolution included finding the natural taxonomies of evolution and involution.

Involution implies a degradation of the purpose of an individual in order to reduce the energy required to deal with reality.

When dealing with complex problems it is frequently seen how individuals avoid responsibility replacing the original purpose with a subordinated objective in order to "ensure" success.

The unicist algorithm (taxonomy) of evolution

Evolution implies the existence of an algorithm (taxonomy) to achieve a purpose. The first step appears to be putting the purpose into action. This implies a previous taxonomic step: the understanding of the purpose. Then the first step is putting it into action. Without understanding, no action is possible.

The second step is then finding a way to optimize the energy; thus the energy conservation principle is applied.

The Unicist Ontogenetic Algorithm (Taxonomy) of Evolution
in Unicist Standard Language

(*) Unicist Thinking allows emulating nature and makes the integration of the two dualistic approaches possible

Purpose (*)

3   0

Evolution

Forward-thinking

Backward-thinking

1 Active Principle

2

Energy Conservation Principle
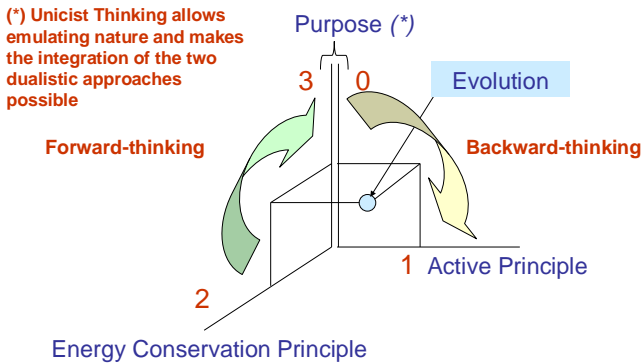
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When this taxonomy is respected and successful, individuals are evolving. This implies that they add value to the environment, obtain the counterpart and learn from the environment at the same time.

Evolution implies being aware of reality and doing conscious actions in order to adapt to the environment.

The Unicist Ontogenetic Algorithm
of Adaptive Systems for Work

Businesses are typical adaptive systems. We use the word "business" as a synonym of "work". Businesses need to adapt to the environment in order to achieve the permanence of their transcendent goals and the personal goals of their participants.

Adaptive systems for work are entities that interact with the environment having the characteristics of a complex system but with an implicit and explicit duty to produce a predefined result.

Work is an environment that generates the need of adaptive systems in order to produce results and administrative systems to use and control the methods used.

The Unicist Ontogenetic Algorithm (Taxonomy) of
Work as an Adaptive System
in Unicist Standard Language
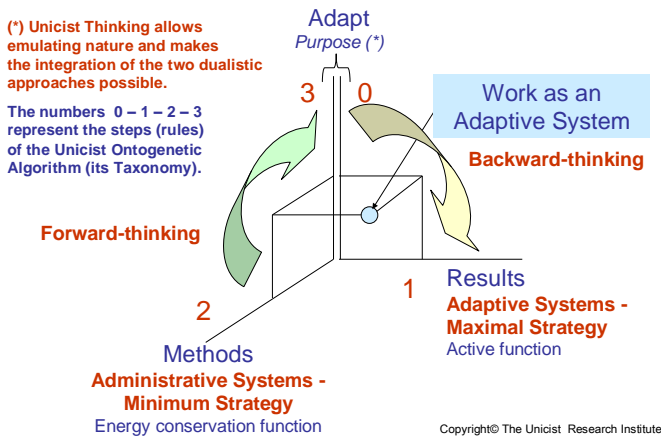
(*) Unicist Thinking allows emulating nature and makes the integration of the two dualistic approaches possible.

The numbers 0 – 1 – 2 – 3 represent the steps (rules) of the Unicist Ontogenetic Algorithm (its Taxonomy).

Adapt
Purpose (*)

3   0

Work as an
Adaptive System

Backward-thinking

Forward-thinking

1   Results
Adaptive Systems - Maximal Strategy
Active function

2

Methods
Administrative Systems - Minimum Strategy
Energy conservation function

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The maximal strategy implies achieving or overcoming the planned results using procedures with the necessary flexibility and controlling them based on the feedback of the market.

The minimum strategy is based on using strict methods that use rigid procedures and intrinsic control systems based on accepted standards.

The fundamentals of work considered as an adaptive system

Work is an adaptive system when those who are working assume the responsibility for results. But it is an administrative system if the responsibility for results is substituted by the investment of time to do the work.

We can synthesize the conceptual structure of work (business) as follows:

THE CONCEPT OF WORK AS AN ADAPTIVE SYSTEM
in Unicist Standard Language
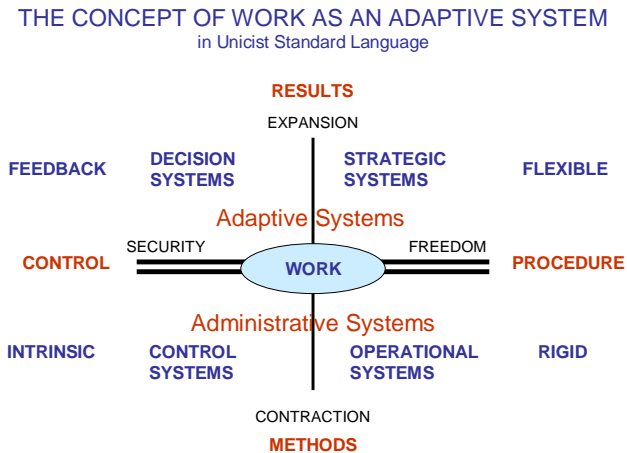
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Therefore, it can be said that a business, considered as an "organization of work", needs to include both aspects (i.e. adaptive and administrative systems) in order to achieve its goals.

Unicist ontogenetic algorithm (taxonomy) for the design of an adaptive system work process
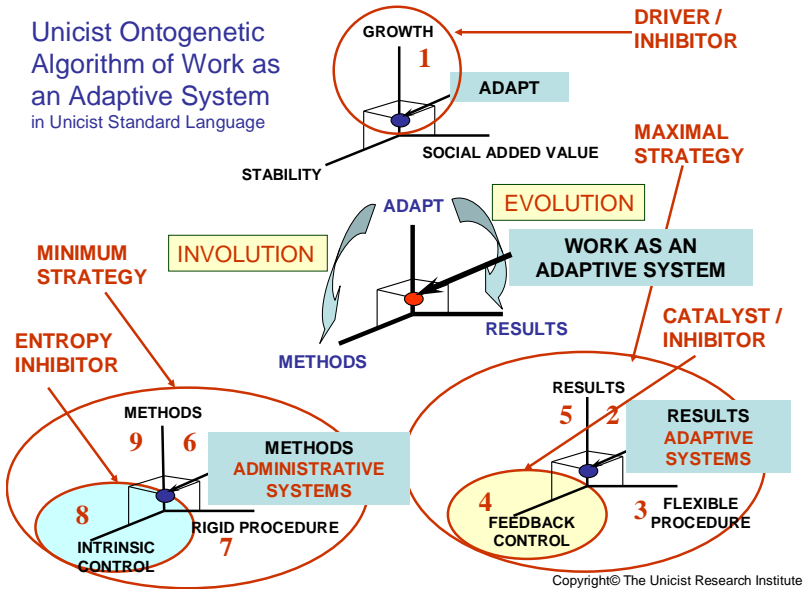
1) Definition of the objective to grow
   a) Define the results to be achieved
   b) Define the methods to be used
   c) Define the influence that needs to be exerted on the environment
2) Define the hypothetical results that need to be achieved
3) Define the flexible procedures to be used
4) Define the feedback that will be considered to control
5) Define the way results are being ensured
6) Define the methods that are available
7) Define the procedures that will be used
8) Define the control system of the procedures
9) Confirm the efficiency of the methods

The use of the unicist ontogenetic algorithm requires the quantifica-

tion and qualification of each of its components (see mathematics of the unicist logic) and the use of destructive and non-destructive pilot tests to confirm the functionality of the solution that was developed.

Pilot tests and the final implementation of a strategy have to follow the steps of the unicist ontogenetic algorithm.

Unicist approach to complexity in adaptive systems
(an ontological approach)

> **The unicist approach to adaptive (complex) systems**
>
> The most primitive adaptive (complex) system is given by two elements that have a biunivocal relation (loop). For example:
>
> • The lack of credibility of an innovation inhibits its use and the absence of use impedes credibility.
>
> • The absence of production causes inappropriate distribution and dysfunctional distribution causes a lack in productivity.
>
> Until the appearance of the solution given by the unicist approach, there were four palliatives:
>
> • Intuition
>
> • More or less subjective arbitrary models
>
> • Fallacies to avoid the perception of complexity
>
> • Ceteris paribus
>
> Complexity is self-evident in the field of social, institutional and individual evolution. It can be said that evolution is a complex problem itself.
>
> Complexity is implicit in the core of the business world. Those who can apprehend it and influence the environment are successful. Those who cannot influence complexity, fail. The unicist approach is necessary for those who need to manage complex problem to transform them into simple solutions, easy to be implemented.

We think it is necessary to define complexity in the field of business. It is necessary to be understood to develop and use adaptive systems:

When you have to add $1 + 1$ the problem is simple; $1 + 1 = 2$. There is only one possible solution and all you have to do is follow a method. But the problem becomes complex if you reverse the equation ($2 = ???$) because you need to produce a result. In this case there are infinite solutions and the problem is complex because you have to find the equation that optimizes the process of producing results. That is why using methods is simple but ensuring results is complex.

We define a complex system as an open system, which determines the functionality of a unified field through the conjunction of objects and/or subsystems.

A complex system has the following characteristics:

1) It is an open system, meaning that the energy flows to and from the system itself.

2) The external limits of the unified field (its "globality") behave as the ones of a fuzzy set.

3) Functionality is determined by the "conjunction" of elements that influence each other, generating "loops" of cause-effect relations.

4) The "disjunction" does not exist in a complex system.

5) The sum of the results of the subsystems is not equal to the result of the total complex system.

6) Relationships among subsystems are not linear; they respond to the double dialectics laws (purpose-antithesis / purpose-homeostasis).

7) Complex systems generate their own energy transformation using their own energy and the energy from the environment.

8) Complex systems are composed of subsystems, which are also composed of other subsystems, until reaching a descriptive level that is functional to their purposes.

9) Complex systems cannot be observed. The observer is part of the system.

10) Complex adaptive systems can only be measured in their results.

Emergence is not considered as a characteristic of a complex system because it is also part of what we call simple or systemic systems.

"The Unicist Theory of Evolution", the "Unicist Logic" and the "Logic of Fallacies and the Anti-concepts", made the conceptual modeling and operation of complex systems possible.

Some examples of complex systems can be found in the social, economical, political and cultural aspects of reality as well as in management, marketing, strategy (of countries, institutions and individuals), learning processes, continuous improvement and interpersonal relations.

Human Complex / adaptive systems research design

Human Complex or adaptive systems need to be researched in their unit. No artificial experiences are possible. As all the elements are integrated with the conjunction "and", the elimination of one of the elements changes the purpose of the system. Artificial experiences or simulations are dysfunctional to human complex systems research.

The final goal of every diagnosis is to influence upon the reality under study. To do so the researcher needs to explain it, but the explanation is only a comprehension framework to exert influence on the environment under study. The research that merely tries to explain a situation becomes an end in itself and therefore tends to be fallacious.

The "unified field" to study

All reality that operates as a complex system needs to be approached as a unified field. The unified field is not susceptible to division into variables. Division is only possible when dealing with a non-complex system. A complex system can only be studied as a unit.

A very strict methodology, forecast and validation/falsification are required to avoid falling into fallacies that will lead into erroneous diagnoses.

The researcher needs to know the unified field to be studied directly or through homology. If it is not understood then neither its ampli-

tude nor its depth can be acknowledged. Both elements i.e. amplitude and depth, tend to be known generically as amplitude.

The understanding of a culture when making a country diagnosis calls for a depth that allows reaching the concept of the culture and an amplitude that permits to encompass economic, social, political, technological, religious, cultural and linguistic aspects.

To understand a global scenario implies, on the other hand, enlarging the unified field to understand the relative functionality of several cultures.
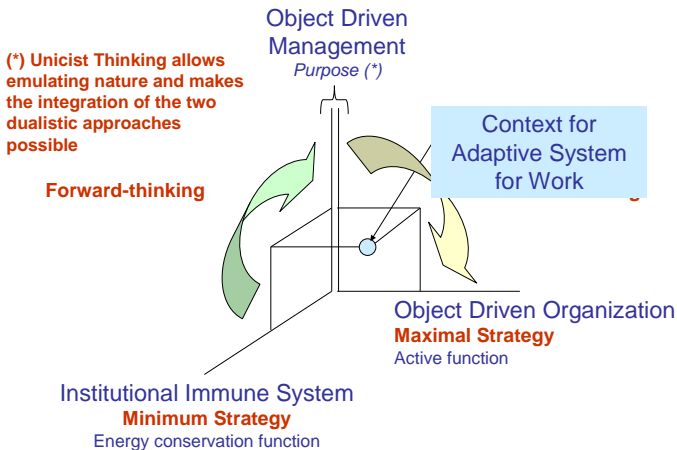
The Unicist Standard for Adaptive Systems

The Unicist Standard for adaptive systems design implies an upgrade in work organization. It establishes the basic conditions to design work, organizational and institutional processes.

When the work is individual the system might be in the mind of the worker. This is the case of artisans, artists, etc. But when the work is developed with the participation of others, the systems are part of the organizational structure of the group.

The Unicist Standard defines that the purpose of an organization is to manage the hardware, software and peopleware involved in the working processes. That is what we have named "Object Driven Management".

Fundamentals of the Context for Adaptive Systems for Work

Object Driven Management
Purpose (*)

(*) Unicist Thinking allows emulating nature and makes the integration of the two dualistic approaches possible

Forward-thinking

Context for Adaptive System for Work

Object Driven Organization
Maximal Strategy
Active function

Institutional Immune System
Minimum Strategy
Energy conservation function

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To achieve this purpose it is necessary to put it into action through an object driven organization that allows emulating the organization of nature but with the technology that is available.

To ensure the management process organizations need to have an immune system to ensure that the object driven organization can fulfill its purpose.

The use of adaptive systems

Adaptive systems are systems that have been designed to interact with the external and internal environment. To be able to organize by objects it is necessary to use both adaptive and administrative systems to organize the work processes.

Adaptive systems are necessary to expand the boundaries of work. Thus, continuous improvement, customer relationship management and project management are paradigmatic cases of adaptive systems in work processes.

The Fundamentals of Systems for Work
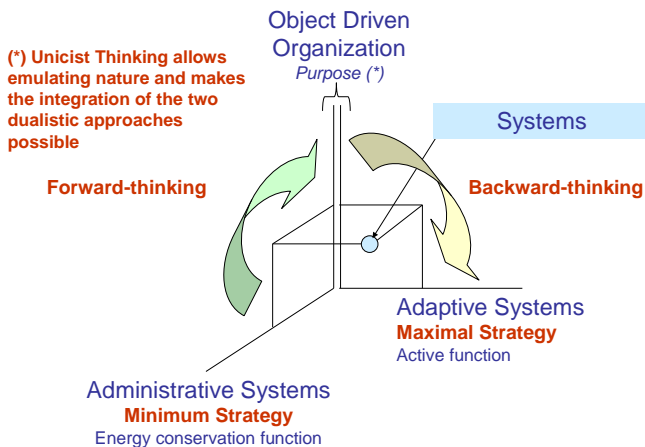
Adaptive systems are necessary to provide the maximal strategy based on their flexibility and feedback capacity while administrative

systems are necessary to establish a secure operational and control activity.

The use of adaptive systems in the company has been disregarded in the past because the control and operational activities prevailed over the market growth and competition.

The Unicist Standard provides the necessary structure to design adaptive systems where they are needed.
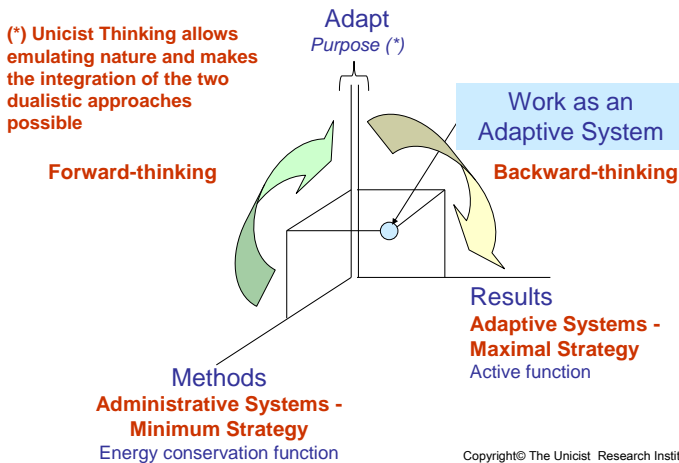
The Nature of Adaptive Systems for work

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The Fundamentals of Work as an Adaptive System

(*) Unicist Thinking allows emulating nature and makes the integration of the two dualistic approaches possible

Adapt
Purpose (*)

Work as an
Adaptive System

Forward-thinking

Backward-thinking

Results
**Adaptive Systems -
Maximal Strategy**
Active function

Methods
**Administrative Systems -
Minimum Strategy**
Energy conservation function

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The maximal strategy implies achieving or overcoming the planned results using procedures with the necessary flexibility and controlling them based on the feedback of the market.

The minimum strategy is based on using strict methods that use rigid procedures and intrinsic control systems based on accepted standards.

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Therefore it can be said that a business, considered as an "organization of work" needs to include both aspects in order to achieve its goals.

We can synthesize the conceptual structure of work (business) as:

THE CONCEPT OF WORK AS AN ADAPTIVE SYSTEM

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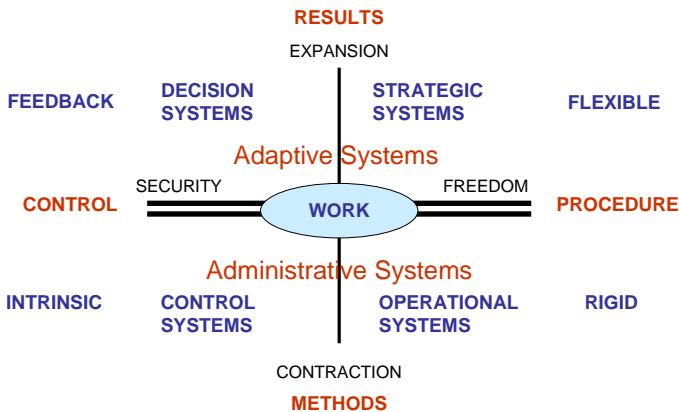
Adaptive systems concepts

Results

The production of results is the purpose of adaptive systems. They include the necessary quality assurance to guarantee the production of results.

Flexible procedures

In order to ensure the production of results adaptive systems need to have flexible procedures so as to adapt to changes in the environment. The flexibility needs to be minimal to ensure the efficiency of the procedures.

Control through feedback

Feedback is an essential aspect of adaptive systems in order to provide the adequate responses to the environment. Feedback is the complement to ensure results.

Administrative systems concepts

Methods

The purpose of administrative systems is to ensure the use of methods that guarantee the achievement of the minimum strategy.

Rigid procedures

To ensure minimum strategies the procedures need to be rigid. Administrative systems are based on efficiency which implies ensuring the fulfillment of rigid procedures.

Intrinsic control

As administrative systems are driven by rigid procedures, they need to have an intrinsic control system that ensures the fulfillment of the procedures. The intrinsic control is the complement for the use of methods.

Taxonomy for the design of an adaptive system work process
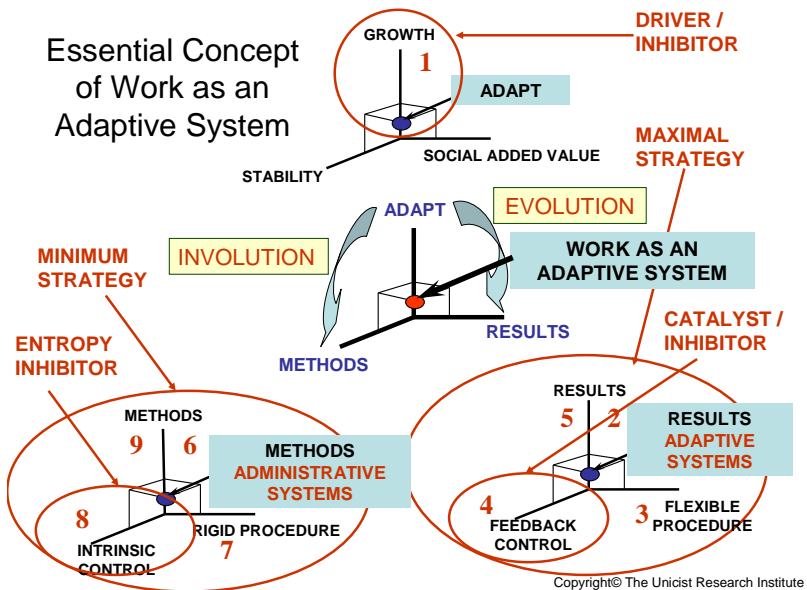
1) Definition of the objective to grow
2) Define the hypothetical results that need to be achieved

3) Define the flexible procedures to be used
4) Define the feedback that will be considered to control
5) Define the way results are being ensured
6) Define the methods that are available
7) Define the procedures that will be used
8) Define the control system of the procedures
9) Confirm the efficiency of the methods

Adaptive Systems and Administrative Systems

Adaptive systems are based on the support of actions using backward thinking.

This implies that the results are envisioned when dealing with the system. Adaptive systems are open to the environment in order to obtain feedback and adapt their procedures to it.

The purpose of administrative systems is to manage methods and their control.

The results are implicit in their design and work processes flow naturally when they have been adequately designed and the conditions of the environment do not change.

The characterization of systems as adaptive or administrative is objective. Maximal strategies require adaptive systems and minimum strategies require administrative systems.

Administrative systems require a lower level of energy to be used. Therefore there is a natural trend in companies to transform adaptive systems into administrative systems.

An example of this is the massive dissemination of the GANTT model which is an administrative system to substitute the PERT or CPM models which work as adaptive systems.

Businesses as working organizations

Businesses are paradigmatic examples of "work". They can be naturally market oriented, business oriented, product/service oriented or shareholder oriented.

Businesses are, by definition, adaptive systems because they need to have a maximal strategy in order to grow. Therefore they need to use adaptive systems in their maximal strategy and administrative systems for their minimum strategy.

THE CONCEPT OF BUSINESSES AS ADAPTIVE SYSTEMS
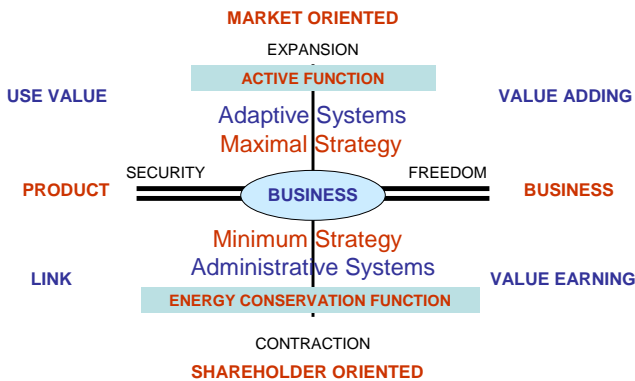
The active function in businesses is driven by their maximal strategies using adaptive systems to ensure results.

Maximal strategies are those that go beyond the existing boundaries. That is why they are necessary to develop the market orientation of a business. The development of maximal strategies requires the use of adaptive systems in order to have the flexibility to adapt and the feedback from the market to adjust the procedures to what is needed.

The energy conservation function in businesses is driven by the minimum strategies using administrative systems to ensure the fulfillment of the methods defined.

Minimum strategies are those that work within the boundaries in a controlled environment. They are necessary to ensure the shareholder orientation. The development of minimum strategies within a controlled environment requires the use of administrative system to ensure the operation and its control.

All the systems that deal with the management of markets, value generation and the use value of products need to be adaptive. Customer Relationship Management is a paradigmatic example of an adaptive system that in most of the organizations has been transformed into an administrative system.

All the systems that deal with the shareholder's interests, the perception of the products and services and the profitability of the businesses need to be administrative. The administrative systems require a lower level of energy than adaptive systems; that is why they cannot be degraded unless they are misused.

Application Fields of Adaptive Systems

Institutions considered at an operational level

Institutions are organizations that fulfill the transcendent and personal goals of a group, have a mission to do so, rules to work, guidelines to drive the internal behavior and procedures to develop their activity.

At an operational level the institutional concept can be described in the following matrix.

Operational Concept of Institution
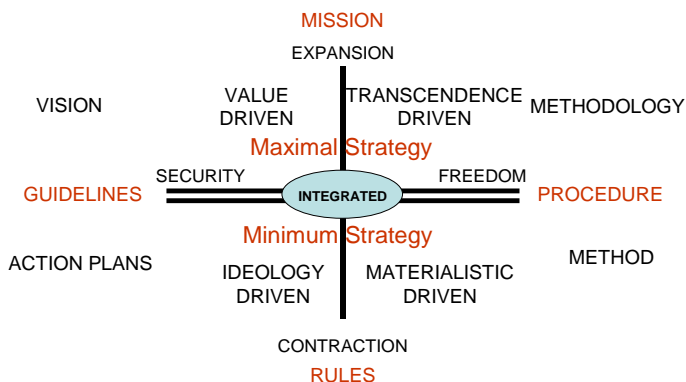
At an operational level, permanence of institutions is defined through their mission, rules, guidelines and procedures.

Their members are those who accept this environment as their own and differentiate the inside from the outside of the organization. Institutions need to have a "wall" separating them from the rest of the world.

This wall is defined by the mission, vision, action plans and rules that are applied.

The institution exists when the non-fulfilment of the rules is not acceptable. But this wall needs to have doors to communicate with the environment and gatekeepers to control the communication.

Thus there are four different institutional segments:

-Transcendence driven
-Value driven
-Ideology driven
-Materialistic driven

These four attitudes might be integrated in different roles within an institution.

Transcendence driven institutions

In a transcendence driven institution the institutional vision is used in everyday activity. It has flexible methodologies to apply the vision but strict methods to follow the operational rules.

It is sustained by a defined ideology that represents the transcendent values.

Value driven institutions

Their everyday activity is driven by the methodologies they have. Being strict in the application of methodologies, the vision of their activity is considered implicit in them.

These institutions follow an ideology to ensure their value. This is sustained by an operational approach to ensure the achievement of their goals.

Ideology driven institutions

Their everyday activity is driven by strict rituals and methods that materialize the ideology. They establish a defined path to behave within the rules.

They materialize the values implicit in their ideology while being sustained by the transcendence of their activities.

Materialistic driven institutions

Their everyday activity is driven by the guidelines that are strictly followed to ensure the operational results.

They need to consider their activity as transcendent in order to sustain their spirit de corps. They are sustained by the values implicit in their actions.

Maximal and minimum strategies of institutions

Maximal and minimum strategies have to be managed integrated in their oneness. But humans learned to fly from one point to another when they separated and integrated sustentation and propulsion.

Human strategic behavior was possible to be implemented when maximal and minimum strategies could be defined separately but implemented in their oneness.

The purpose of the strategy of an institution is to grow in order to sustain present and future generations.

The maximal strategy that ensures growth is based on the functionality and strict fulfillment of the mission, the methodologies and the vision of the institution.
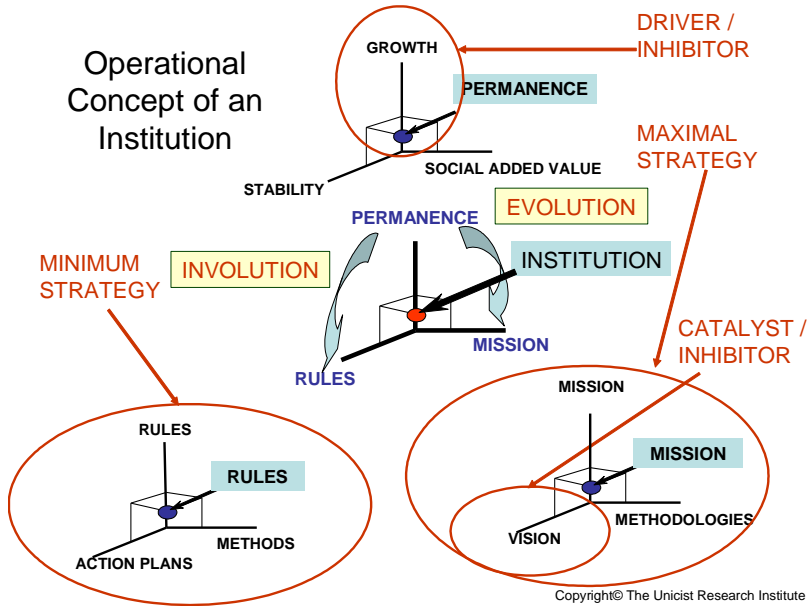
Besides being part of the maximal strategy, the vision is the catalyst of the minimum strategy. When the vision is not respected, then the minimum strategy is inhibited.

The leadership type to build and sustain maximal strategies has to be dominantly a constructive or creative one.

The minimum strategy implies the strict fulfillment of the rules, methods and action plans. Minimum strategies sustain the survival of the institution.

Therefore they must be secure. The rules include the achievement of goals and have to be fulfilled.

To do so the leadership type to sustain a strict fulfillment of operational methods, action plans are rules has to include authoritarian and charismatic elements.

Conclusion

An integrated institution includes all these elements in their organization.

The development of members within the institution has to consider their possibilities to add value to the institution and the prices these members are willing to pay.

The "prices to be paid" mean that the individual accepts that institutional goals prevail over personal goals. When this is the case the individual will be a future leader in the organization.

When individual goals prevail over institutional objectives the individual is a follower or a manager of minimum strategies.

The life of institutions depends on the adequate management of their members.
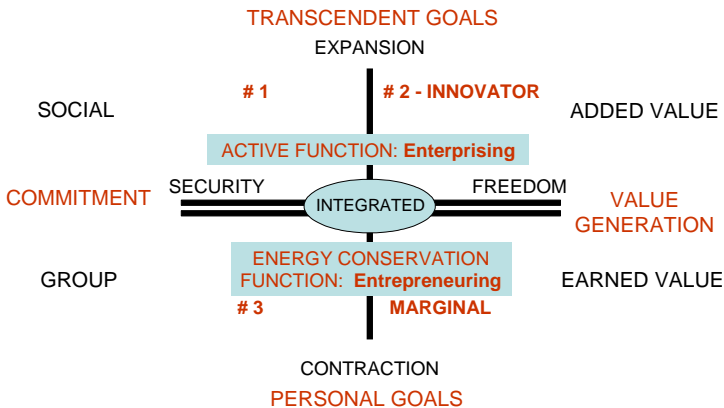
About Enterprises

In the business world institutionalization needs to be considered in terms of added value to foster growth. The existence of transcendent goals makes a company more reliable than a business that is only concerned about making money.

But it has to be considered that enterprises include necessarily an entrepreneurial activity in order to gain value to grow.

Market growth is basically driven by the enterprising attitude and internal growth is based on the entrepreneurial attitude.

What makes companies grow in a market is its enterprising attitude that includes innovation, superior added value, transcendence based reliability and the integration of a community with their clients and potential markets.

Essential Concept of an Enterprise

TRANSCENDENT GOALS
EXPANSION

1   # 2 - INNOVATOR

SOCIAL   ADDED VALUE

ACTIVE FUNCTION: **Enterprising**

COMMITMENT   SECURITY   INTEGRATED   FREEDOM   VALUE GENERATION

ENERGY CONSERVATION
FUNCTION: **Entrepreneuring**

GROUP   # 3   **MARGINAL**   EARNED VALUE

CONTRACTION
PERSONAL GOALS

As you can see enterprising is a condition to be a leader or an innovator in a market. It has to be considered that the market has to be seen based on the nature of a business.

There are businesses that cannot be seen with geographic limits. Markets are more or less globalized but the limit of a market cannot be established by the company, the limit is established by the credibility of a market.

One can be a leader in a specific city, but if the business has not objective local ties, being a local leader does not imply being a Nr. 1 company.
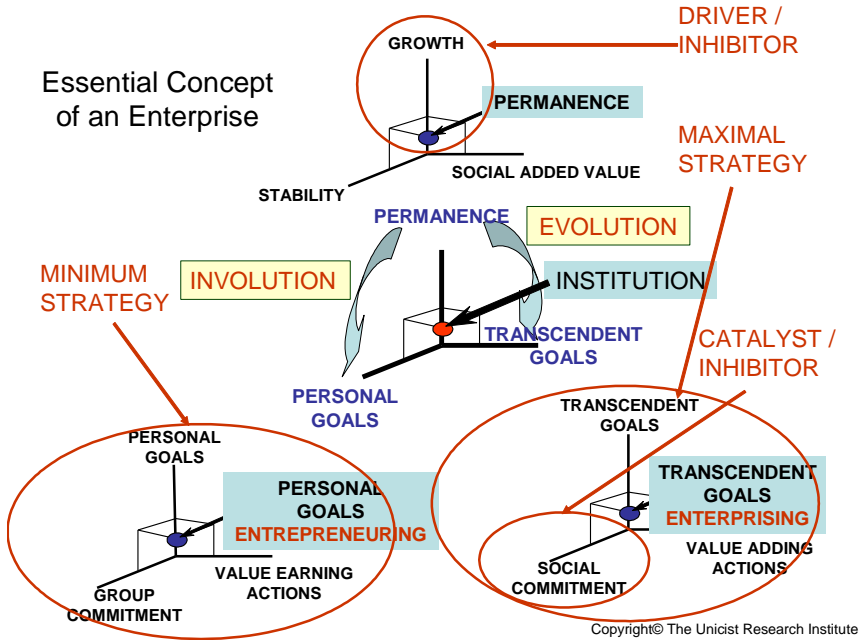
You cannot imagine that a company is a Nr. 1 leader just because it builds planes in a city in the US, sells these planes to local users and has a dominant market-share in the region.

To be a Nr. 1 leading company the business has to be considered in the market of the airplane industry. A company might be a local leader because of the circumstances but if it is not a leader among competitors it is positioned as a follower.

Permanence is the purpose of an enterprise

Enterprises are necessarily timeless. That means they are organized to exist with no time limits. Therefore they are based on an ethics in which they exist independently of the current members that participate in it. But enterprises cannot live based on taking advantage of their members. That is why they need to consider their members as part of the institution.

The life of an institution prevails over the life of their members, but it does not live on the expense of the life of their members.

Essential Concept of an Enterprise

DRIVER / INHIBITOR

GROWTH

PERMANENCE

SOCIAL ADDED VALUE

STABILITY

MAXIMAL STRATEGY

PERMANENCE

EVOLUTION

MINIMUM STRATEGY

INVOLUTION

INSTITUTION

TRANSCENDENT GOALS

PERSONAL GOALS

CATALYST / INHIBITOR

TRANSCENDENT GOALS

PERSONAL GOALS

PERSONAL GOALS ENTREPRENEURING

TRANSCENDENT GOALS ENTERPRISING

VALUE EARNING ACTIONS

VALUE ADDING ACTIONS

GROUP COMMITMENT

SOCIAL COMMITMENT

The entrepreneurial attitude makes the growth of the institution possible. It earns the necessary value to grow. Enterprising attitude makes the company grow in the market. Minimum strategy is ensured by entrepreneurs and maximal strategy is possible because of the existence of enterprisers.

But the integration of both the maximal and the minimum strategies is based on the existence of someone who is able to sustain the permanence of the company. As the entrepreneurial attitude sustains survival, it needs to be very active in its reaction.

Enterprising implies social commitment, transcendent goals and value adding actions. Therefore it requires a highly structured approach that requires an adequate preparation in order to sustain permanence.

When an institution needs to survive and an entrepreneurial attitude becomes the first reaction to a threatening environment, the institution is in an involution cycle.

Evolutionary institutions are those who face threats based on maximal strategies considering them as part of evolution and use the minimum strategies to just build the necessary survival strategy to make the evolution possible.

About entrepreneurs

Entrepreneurs are organizations in which the activity is driven by personal and individual goals. Their actions are oriented towards earning value and profit while they are committed to individual and group interests.

There are two extremely different entrepreneurial projects: the "solopreneur" and the start-up businesses.

Solopreneurs are individuals who make businesses as lone runners.

Sometimes they are considered as a self-employment. But in fact these are the entrepreneurs that are either:

a) Survivors who are trying to make a living
b) Specialists, artists, scientists, professors who have a high personal value in a market

The start up business is an incipient enterprise that necessarily begins to work with an entrepreneurial attitude until "permanence goals" are possible.

When companies "are born", they are either entrepreneurs or survivors. Survivors usually tend to disappear when a crisis affects their market and they also have great difficulties in managing generational change.

The characteristic of the entrepreneurial attitude is that the maximal strategy is given by a group that is materialistic and ideology driven. That is why entrepreneurs can only do what they "believe" in.

They have a great difficulty to change based on the needs of an environment. The consequence of this is that more than 80% of entrepreneurs disappear from the market within the first two years.

Essential Concept of Entrepreneurship
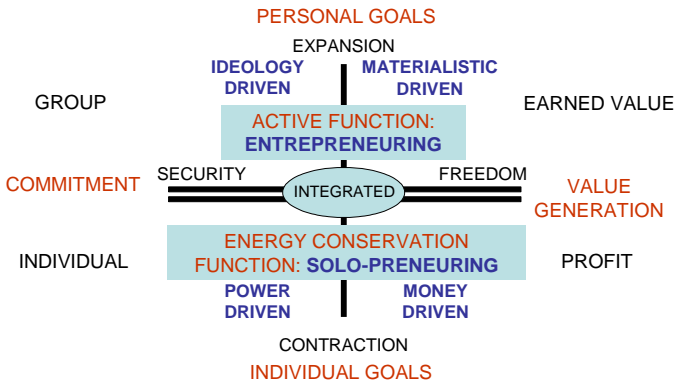
Their minimum strategy is based on a money making attitude and the need to be in power.

Entrepreneurs cannot manage without being in power of the situation they are dealing with. That is why they have great difficulties to grow beyond their own boundaries.

But they are extremely powerful in making money within their beliefs. Entrepreneurs need to transform into enterprises to make a real growth in the market. But they do this only if they are led by someone who is interested in building an enterprise considering the entrepreneurial stage as the first step to do so.

Annex 1:
Destructive & Non-destructive Pilot Testing

Objects are omnipotent fantasies unless they have been tested. Object testing implies testing their functionality and requires a precise design of the tests. The "trial and error" use of objects is not a pilot test.

Pilot tests are the drivers of the unicist reflection processes. Pilot tests have two objectives:

1) Falsification of knowledge

2) Validation of knowledge

1) Falsification – Destructive testing

Falsification, in the field of complex problems, implies finding the limits of the validity of a given knowledge. To do so, it is necessary to develop experiences in homologous fields until the limits of validity are found.

Two elements are homologous when they have the same "nature". A whale and a dog (an extreme example) are homologous if they are considered as mammals. A dollar and a yen are homologous considering that they are both money.

These two cases demonstrate that homology can be total or partial. When the knowledge necessary to influence a reality is falsified in a totally homologous field, then it is naturally secure knowledge. The extreme condition of this example is the homology of two identical elements.

The falsification process is a destructive test for knowledge that is applied to realities with incomplete homologies. The destruction oc-

curs when a condition is found to demonstrate the fallacy of the knowledge.

Models to falsify knowledge using destructive testing

Destructive testing needs to be the first test when dealing with complex problems. The first step of a reflection process implies projecting one's beliefs on the external reality. This implies needing a destructive testing approach to eliminate the subjectivism that is implicit in any projection.
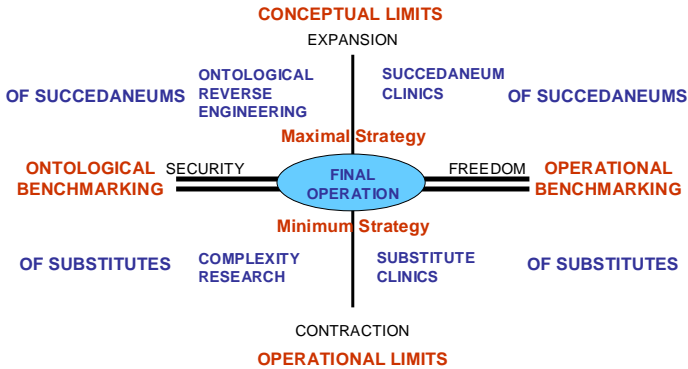
Destructive testing allows defining the limits of the validity of knowledge considering that there are always, on the one hand, conceptual limits and, on the other, operational limits.
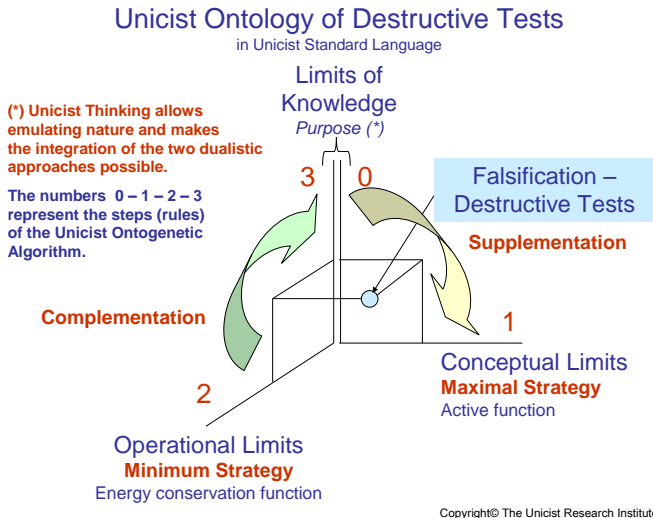
The active function of destructive tests implies finding the conceptual limits which means dealing with operational and ontological benchmarking of succedaneum solutions.

On the other hand, the energy conservation function is based on finding the operational limits considering the operational benchmarking and the ontological benchmarking of substitutes.

Unicist Ontology of Destructive Tests

CONCEPTUAL LIMITS
EXPANSION

OF SUCCEDANEUMS   ONTOLOGICAL REVERSE ENGINEERING   SUCCEDANEUM CLINICS   OF SUCCEDANEUMS

Maximal Strategy

ONTOLOGICAL BENCHMARKING   SECURITY   FINAL OPERATION   FREEDOM   OPERATIONAL BENCHMARKING

Minimum Strategy

OF SUBSTITUTES   COMPLEXITY RESEARCH   SUBSTITUTE CLINICS   OF SUBSTITUTES

CONTRACTION
OPERATIONAL LIMITS

There are different models of destructive tests:

Substitute Clinics

This approach implies developing a real solution, comparing this solution with its substitutes and finding out the SWOT they both generate and the response of the market.

Complexity Research

It implies finding the limits of the validity of substitutes based on experiencing, using acceptable preexisting secure knowledge and comparing it with the knowledge that is being falsified.

Ontological Reverse Engineering

This implies using the technology of reverse engineering comparing succedaneum solutions with the solution that is being falsified.

Succedaneum Clinics

This is the final stage before real application. It requires developing a real solution for a real problem and allowing the market to choose between succedaneum solutions and the one that has been developed. It implies finding the SWOT the solution generates and the response of the market.

Real Operation

The real operation is what defines the final limits of the knowledge that is being falsified.

2) Validation – Non-destructive testing

Validation implies the factual confirmation of the validity of knowledge. Validation is achieved when knowledge suffices to exert influence on a reality in a predictable way.

The validation process is homologous to a non-destructive test in the field of material research. Validation implies cause-effect relations. Therefore, validation can only be applied to a simplified field of a complex reality.

Validation provides a reliable knowledge to operate under controlled conditions. The knowledge is valid if the conditions of the applica-

tion environment are analogous and homologous to the characteristics of the validation environment.

Models to Validate a Specific Reality

The available models to validate a reality are:

1) Analogical models
2) Mathematical models
3) Rule based models
4) Scientific-empirical models
5) Conceptual models

Analogical Models

Analogical models are the most basic way to validate a reality. The typical expression of this level of validation is "If something worked here, why wouldn't it work in this other similar context?"

This validation concept has so many "ifs", that there is an extremely high probability of being fallacious. Taking others' experiences and transferring them to other contexts without a validation framework is a "random" process.

Mathematical Models

Empirical foundations need mathematical models to be valid.

Statistics is one of the tools that empirical foundation uses to ensure that results are reliable. Mathematical models are the foundation of empiricism.

Without mathematics, empiricism is equivalent to an analogical approach.

Rule based Models

Foundations are logical when strict rules are applied.

If rules are not applied, the logical approach degrades to common sense, the outcome of which also depends on chance or pure intuition.

Rule based models are the support for the unicist logic.

Scientific-empirical Models

Scientific-empirical models are based on mathematical applications to validate knowledge, or on an epistemological approach to falsify foundations.

They provide certainty to causal foundations. Without validation or falsification causal foundations are fallacious.

Conceptual Models

Conceptual models and conceptual analysis are necessary to make conceptual foundations reliable.

The possibility of building conceptual foundations does not exist if the conceptual structures of a particular reality and its context are not available.

Conceptual foundations are based on the knowledge of the structure of concepts.

Synthesis

Pilot tests must include both non-destructive and destructive tests. The application of destructive tests requires being aware of the concepts of the realities where this test is applied.

Knowledge is secure when its validity and its limits were found. Exceptions to this rule are universal natural laws which are "universally homologous".

Annex 2:
The Unicist Logical Approach
to Applied Complexity Sciences

The complexity of a specific aspect of reality is objective. This means that it is impossible to deal with it using cause-effect research without changing its functional nature. This indicates the existence of complexity.

The unicist approach to complexity sciences implies the discovery of the ontological structure of a reality and the objects that integrate it, defining the ontological algorithm and then the actions that can be done to influence such reality.

This approach starts with the finding of the nature of a specific element of reality and ends with the definition of the actions that can influence such reality.

The unicist ontology is a specific type of ontology that is structured emulating the ontogenetic intelligence of nature. It considers that the nature of living beings and their actions is defined by a purpose, an active principle and an energy conservation principle which are integrated following the rules of the supplementation law (between the purpose and the active principle) and the complementation law (between the purpose and the energy conservation principle).

The ontology of a functional aspect of reality is unique, being therefore timeless and cross-cultural. Its application integrates unicist ontology, with unicist logic and the unicist ontology of evolution.

Things in real life might have different functionalities. Each of these functionalities has its ontology. For example, the same type of boat can be used as a fishing boat or a survival boat. A fishing boat has "one" ontology and the survival boat has another.

Human Complex Adaptive Systems

Human individual, institutional, businesses and social behavior are also paradigmatic complex adaptive systems. The application fields of the unicist approach to complexity science are the human complex adaptive systems.

Examples of Human Complex Adaptive Systems:

Cultural Behavior and Archetypes
Cultures have to be considered as a unified field, which implies that they have a structure of taboos, utopias and myths to face the external reality in a defined way that has to be considered as a limit for any human complex adaptive system.

Economic Models
As economic models have to be redundant with the social values included in a cultural archetype, the use of non-consistent economic rules will produce paradoxical effects because it cannot be recognized as valid.

Educational Models
One of the objectives of an educational model is to socialize people's behavior making it consistent with a cultural archetype. The introduction of alien educational models produces necessarily paradoxical results.

Businesses
Businesses are, by definition, complex systems that need to deal with the market, going beyond the present boundaries of the activity. Therefore they need to be defined considered as part of the unified field of the market they work with.

Conscious Personal Development

Personal evolution depends on the capacity of individuals to adapt to the environment they decided to live in. Thus it depends on the individual's capacity to apprehend the unified field of that environment and influence it.

Necessary Compromises to Manage Complex Adaptive Systems
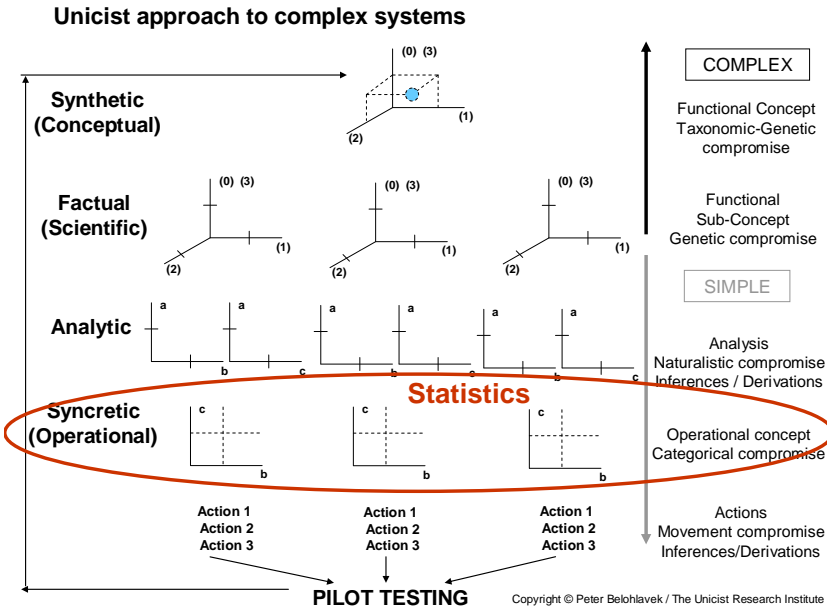
The generic approach:

1) Human adaptive systems are in permanent motion. To establish a fixed point based on their oneness the ontological structure needs to be discovered. This definition includes limiting the boundaries of the system.

2) A taxonomic-genetic compromise needs to be done to transform the oneness into the elements that integrate its ontogenetic structure.

3) A genetic compromise is needed to deal with the sub-ontologies or objects included in the ontogenetic structure.

4) A naturalist compromise is necessary to divide the objects of the ontogenetic structure into the double dialectical elements and make the consequent inferences on their behavior.

5) A categorical compromise needs to be done to define the ontological categories at an operational level.

6) A motion compromise has to be done to define the actions that allow influencing the adaptive system.

This approach implies transforming a human complex adaptive system into a manageable system making the necessary compromises to transform its oneness into operational actions to generate results.

The knowledge of an ontological structure of a unified field defines the existence of the possibility to exert influence on it. Mathematically, a possibility exists or not (1 or 0). The success of influential actions belongs to the field of probabilities because of the multiple compromises that have been done.

The Use of Statistics in Complex Problem Solving

Statistics are only valid if the "variables" they manage describe the ontological structure of a reality. This means that the knowledge of the ontology of a complex problem must pre-exist before statistics can be used.

From an ontological point of view statistics are necessary to enter at an operational concept level to define the sizes of the segments that might be relevant.

Comparison of
the Approaches to Complexity Sciences

Aspect	Peter Belohlavek's approach to Complexity Sciences (*)	Preexisting approaches: Bateson, Förster, Lorenz, Maturana, Morin, Prigogine and others
Field of Study	Complex adaptive systems	Complex adaptive systems
Approach	Pragmatic - Structural - Functionalist	Empirical
Definition of the field of study	A specific reality as a unified field that includes the restricted and wide contexts and the emergence of the system	Based on the emergence of the system
Possibility of external observation	Inexistent	Inexistent
Research method	Unicist Ontological Research	Systemic research
Boundaries of the system	Open	Open
Self-organization	Concepts – analogous to strange attractors	Strange Attractors / undefined
Structure	Double Dialectics Dynamics Purpose - active function - energy conservation function	Variables
Relationship between the elements	Following complementation and supplementation laws	Undefined
Evolution / Involution	Based on the evolution / involution laws of the ontogenetic intelligence of nature	Undefined
Processes	Object driven processes	Undefined
Certainty	Dealing with possibilities and probabilities	Dealing with probabilities
Demonstration	Real applications	Real applications
Emulation in mind	Double dialectical thinking (using ontointelligence)	Complex thought
Emergence	Results	Results
Chaos	Inexistent	Existent
Influence on the system	Based on actions and driving, inhibiting, entropy inhibiting, catalyzing and gravitational objects.	Based on actions
Validation	Destructive and non-destructive tests (real applications)	Systemic research validation methods

**Access the application of the
Unicist Logical Approach to Businesses:**

www.unicist.org/repo/#Unicist

Books by Peter Belohlavek that refer to Complexity Sciences applied to Business Architecture. You can access them at the Unicist Library: www.unicist.com

1. Complexity Science: Unicist Research & Design of Human Complex Adaptive Systems
2. Design of complex systems research
3. Innovation
4. Institutionalization
5. Introduction to the nature of perception and credibility
6. Introduction to Unicist Business Therapeutics
7. Introduction to Unicist Diagnostics
8. Introduction to Unicist Market Segmentation
9. Introduction to Unicist Object Driven Entrepreneuring
10. Knowledge, the competitive advantage
11. Natural Organization of Outsourcing and Insourcing
12. Ontointelligence
13. Peopleware: The Integrator of Hardware and Software
14. Real Diagnostics vs. Paradoxical Diagnostics
15. RobotThinking
16. Social Critical Mass in Business
17. The Ethic of Foundations
18. The Nature of Big Change Management
19. The Nature of Doers

20. The Nature of Unicist Business Strategy
21. The Nature of Unicist Object Driven Business Growth
22. The Nature of Unicist Object Driven Change Management
23. The Nature of Unicist Object Driven Institutional Immune Systems
24. The Nature of Unicist Object Driven Leadership
25. The Nature of Unicist Object Driven Management
26. The Nature of Unicist Object Driven Marketing
27. The Nature of Unicist Object Driven Organization
28. The Nature of Unicist Reverse Engineering for Object Design
29. The Ontogenesis of Knowledge Acquisition: The Unicist Ontology of Human Learning
30. The Origin of Human Fallacies
31. The Path of the Architect
32. The Unicist Approach to Businesses
33. The Unicist Ontology of Ethical Intelligence
34. The Unicist Ontology of Family Businesses
35. The Unicist Ontology of Human Capital Building
36. The Unicist Ontology of Network Building
37. Unicist Business Architecture
38. Unicist Business Diagnostics: The Compendium of Ontologies for Business Diagnostics
39. Unicist Business Objects Building: An Ontology based and Object driven Technology
40. Unicist Business Strategy
41. Unicist Business Strategy: Ontology based and Object driven Business Strategy
42. Unicist Business Therapeutics: Ontological based and Object driven Therapeutics
43. Unicist Future Research
44. Unicist Marketing Mix
45. Unicist Marketing: Ontology based and Object driven Marketing
46. Unicist Mechanics: Business Application
47. Unicist Object Driven Diagnostics
48. Unicist Object Driven Learning
49. Unicist Object Driven Management
50. Unicist Object Driven Marketing
51. Unicist Object Driven Negotiation
52. Unicist Object driven Strategy
53. Unicist Ontogenetic Algorithms to solve business problems
54. Unicist Ontology of Language
55. Unicist Ontology to deal with Adaptive Systems
56. Unicist Organization: Object Driven Design

The Unicist Research Institute

(*) **Peter Belohlavek** was born on April 13, 1944 in Zilina, Slovakia. He discovered the Ontogenetic Intelligence of Nature that explains that evolution is purpose-driven and not random. This gave birth to the Unicist Theory of Evolution that made evolution reasonable, understandable and predictable.

The Ontogenetic Intelligence of Nature allowed developing the Unicist Logical Approach based on a pragmatic, structural and functionalist framework, to research and develop complex adaptive systems. The Unicist Logical Approach he developed is based on the Unicist

Double Dialectical Logic that demonstrated the fallacy of Hegel's and Marx's dialectics. (More information: http://www.unicist.org/pb.shtml)

The Unicist Research Institute was the pioneer in complexity science research and became a private global decentralized leading research organization in the field of human adaptive systems.
www.unicist.org/repo/#Unicist