

Launching Transformations at the Academic Information Service, University of Pretoria

Heila Pienaar
University of Pretoria

Mary-Rose Russell
University of Pretoria

Yzelle Roets
University of Pretoria

Hilda Kriel
University of Pretoria

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LAUNCHING TRANSFORMATION AT THE ACADEMIC INFORMATION SERVICE. UNIVERSITY OF PRETORIA

Pienaar, Heila; Russell, Mary-Rose;
Roets, Yzelle and Kriel, Hilda.

University of Pretoria, South Africa

E-mail: pienaarh@acinfo.up.ac.za

Introduction

The management philosophy of the Academic Information Service finds parallels and emulative models in the so-called New Science, in particular the chaos and complexity theories, quantum mechanics, information and field theories.

During the next few minutes the following analogous relationships between 5 aspects of the new science and those of the organisational transformation at the Academic Information Service will be discussed.

- The relationship between creativity at the edge of chaos and organisational creativity and innovation
- The relationship between quantum mechanics and client-centred teams
- The relationship between the creative energy of information and management information systems
- The relationship between invisible fields and the strategic vision or focus
- The relationship between chaos theory and the organisation's values and culture.

Creativity at the edge of chaos

The new scientific discipline known as the complexity theory centres on the realm between chaos and order; it is the emerging science at this edge of order and chaos.

The second law of thermodynamics predicates that the universe has been governed from the beginning of time by a tendency towards disorder, dissolution and decay. Yet this same universe has also managed to provide structure on every scale: galaxies, stars, planets, plants, animals and brains. The complexity theory looks at systems which are complex and yet show signs of spontaneous self-organisation and adaptability.

Complex systems have somehow acquired the ability to bring order and chaos into a special kind of balance. This balance point- often called the "edge of chaos" is where the components of a system never quite lock into place, and yet never quite dissolve into turbulence, either. The edge of chaos is where life has enough stability to sustain itself and enough creativity to deserve the name "life".

This edge of chaos is the constantly shifting battle zone between stagnation and anarchy, the one place where a complex system can be spontaneous, adaptable and alive.

Creative organisations are complex systems, capable of spontaneous self-organisation and sufficiently adaptable to be able to balance on the edge of chaos. But how do you structure such a complex organisation? The answer to this question is to structure it as minimally as possible.

The Academic Information Service is structured on the concept of a flexible project-based network organisation. Groups and teams which form essential components of this network comprise:

- Client-centred service teams (structured in line with our key business process of a "one-stop information service" for each faculty)
- Support teams, such as information technology
- Strategic management team
- Suppliers

Corporate strategies and projects are translated into team strategies, projects and actions.

Project teams consist of members from any part of the network formed into a temporary working arrangement, which dissolve on completion of the project.

The relationship between quantum mechanics and client-centred teams

Poised at the end of the 20th century, our organisations, structured on the principles set down by Sir Isaac Newton, are now crumbling. For 3 centuries we've been planning, predicting and analyzing the world.

Structure has been paramount. Responsibilities have been organised into functions; people organised into roles. The fundamental tools of our organisations have been organigrams, flow charts, design models, numerical data - all elements which have ensured structure, structure and more structure.

We believed that if we studied the parts we would arrive at knowledge of the whole, so we have reduced and described and separated things onto cause and effect and drawn the world into lines and boxes.

The reason we did this, was because it fitted the universe as described by Sir Isaac Newton. We absorbed expectations of regularity into our very beings and organised work and knowledge to fit this universe.

The development of the New Science heralded the demise of Newton's organisation domination. Discoveries of a strange world at the sub-atomic level could not be explained by Newtonian laws, and a new theory, quantum mechanics was developed. This has led to a new way of comprehending the universe, and ultimately the way we look at organisations.

The quantum world is a web of relationships. Everything is inter-connected like a vast network of interference patterns.

This world of relationship is not just an interesting fact - it is all there is to reality. Wheatley quotes Henry Stapp who describes elementary particles in the universe as "a set of relationships that reach outward to other things".

In quantum terms no-one exists independently of relationships with other people. Each of us is a different person in each different context or place.

Translated into organisational language the quantum mechanics theory demonstrates 8 principles:

- the era of the individual has been replaced by the era of the team player
- We should stop describing tasks and instead facilitate processes
- The most essential skill is the ability to build strong relationships with internal and external clients and colleagues
- Participative management makes leadership a skill required by all personnel
- Instead of detailed planning and analysis, structures that foster relationships become important
- The whole of the organisation is more than the sum of its parts
- Improvisation and the ability to be flexible are paramount.

The transformation process at the Academic Information Service started with big structural changes. Hierarchies gave way to a network of teams. Individual services were defunctionalised and service units started serving specific client groups.

Structural changes, however, can only set a climate of change. Real change can only be achieved by the core asset of any organisation, its people. True transformation only takes place when the people are no longer driven by change but change is driven by the people.

One of the most influential vehicles in this regard was the development of a new competency model. But what started out as a competency-based management system became rather a model for development.

A project team, with the help of an external consultant, and integral participation from people on ground-floor level, developed a model to ensure that all teams have the necessary skills to facilitate the key business process.

The individual competencies within the team may vary as long as the team as a whole has all the competencies to deliver the services needed by its clients.

Generic competencies, which include networking, leadership, and client relationships ensure that all personnel develop the skills needed for the new organisational environment.

The model also makes provision for team bonuses if pre-determined goals are reached.

360 degree feedback is used to facilitate the quantum relationships.

THE CREATIVE ENERGY OF THE UNIVERSE - INFORMATION

Within organisations, information has traditionally been seen as a product or a "thing" which is generated by the activities of the organisation itself. This view of information as a consequence of organisational behaviour has, in turn led to the view that information is or should be substantially predictable and controllable.

Access to information within organisations is managed as other products and is generally disseminated on a "need to know" basis.

The new sciences show us that information is not a reaction to happenings within an organisation, but is in itself a dynamic force. Information in its various guises provides order, growth and definition to the organisation.

The validity of this hypothesis can be illustrated by analogy from the medical sciences. We're all very conscious of the fact that our hair and skin constantly replace themselves; lesser well know is the fact that our internal organs also replace their cells on a regular basis. The remarkable thing is that in spite of all this constant renewal of the cells of our bodies, our structure as human beings remains constant. The driving force behind this phenomenon is the information itself that is contained in our DNA which serves as both the organiser of matter and the structure-provider.

As Chopra says "All of us are much more like a river than anything frozen in space and time"

Information, thus, provides the form or structure which is manifested in a physical shape.

Margaret Wheatley, in affirming this function of information says that it is apparent in the very composition of the word information itself. In-formation. Information is the very key to the resulting structures of organisations. So rather than us controlling information, it is information which controls us.

The continuing existence, strength and integrity of organisations depend on 3 elements:

12. the continuous generation of information within the organisation. Information is self-generating and has been described as the solar-energy of organisation.

13. However, in order to function to its optimum it is vital that information is allowed unrestricted free-flow to all parts of the organisation to cross-pollinate the experiences and inter-actions of the members of the organisation. (Chaos is an unsurpassed generator of information).
14. The ability to function as a responsive and open system is vital. The level of consciousness of an organisation predicates its capability to process information.

The lessons from this science-based theory have been adapted by the Academic Information Service and form the focal point of its information management strategies which, at this stage, find their voice in three main activities; an input/output measurement system; the balanced scorecard and a annual services-impact study conducted amongst clients.

Academic libraries are inclined to take a rather linear view of the statistics they collect. Raw data is taken in and produced as proof of productivity or as lobbying chips especially in budgetary negotiations. We view information as a strategic tool which guides not only the structure of our organisation but also constantly dictates changes which need to be made in collection models.

Our input/output measurement system is based on that of Griffiths and King as modified for our transforming organisation by Dr Heila Pienaar. This model allows us to assess the costs of providing services to our clients whilst at the same time to monitor our compliance with and progress towards the strategic goals of the University itself. More emphasis is placed on the interpretation of the measurement in strategic terms than on the mechanics of collection.

The Balanced Scorecard is a complementary model which links different performance measures in a holistic strategic management system. The attainment of long term strategic goals is enabled through the use of a quartet of management processes and perspectives:

15. Translating the vision which ensures consensus of shared vision and strategies throughout the organisation
16. Communicating and linking ensures there are open communication channels which allow multi-directional free circulation of organisational information
17. Business planning provides for the alignment of organisational plans with financial and other resources
18. Feedback and Learning empowers our organisation to become a truly "learning organisation. Information which is fed-back through these processes reshapes the organisation via modified strategies. We are in a constant state of positive change which is seen as integral to our continued successful service-culture.

These 4 processes are put into focus through 4 perspectives:

- Client perspective. How do our clients see us?
- Our internal perspective. What must we excel at?

- Innovation and learning perspective. How can we continue to improve and add value to our core business processes?
- Financial perspective. How do we look to our stakeholders.

One of the most beneficial aspects of these creative information systems is that they operate equally successfully on both the micro (that is the personal) and the macro or organisational levels. This ensures parallel growth and development of personnel and the organisation.

The 3rd method of information collection and management is the annual impact assessment of our products and services carried out in different sectors of our client base. Listening to the voices of our clients through varied structured and open questions we are able to change our way of doing business to meet their expressed, implied, or potential expectations.

The harnessing of the creative force of information within our organisation has given us new direction, shape and focus.

Invisible fields that shape behaviour

Space is the basic ingredient of the universe; there is more space than anything else.

Even at the microscopic level of atoms there is mostly space; 99.999% of an atom is empty.

Space is no longer seen as an empty void. The New Science postulates that all space is filled with fields - invisible, non-material structures. We cannot see these fields but we are able to observe their effects.

Examples of such fields are gravity, magnetic fields, and electricity. The universe can be visualised as being filled with interpenetrating influences and connecting invisible structures. There is potential for action everywhere; any place where 2 fields meet.

From our sun the solar wind, comprising millions of charged particles, streams with enormous speed towards the earth. En route they intersect with one of the earth's invisible fields - the magnetic field. This interaction creates the aurora polaris, better known as the northern or southern lights. The power and energy of this invisible field are brilliantly demonstrated in dramatically coloured light-shows.

Organisational space can be seen in terms of fields with personnel, suppliers and clients as waves of energy.

These waves of energy spread out in all directions inside the organisation, with exponential growth in potential energy.

Electronically-generated information, invisible, but essential is floating along the air-waves. It can be retrieved from the ether, which means that space is an

integral active role-player in our organisations. The term cyberspace is used to describe this phenomenon.

The electronic flow of information can be compared with the solar wind - the beams of electrons from our sun.

The invisible magnetic field can be seen as our clients' or information seekers' needs.

What happens when the information interacts or comes into contact with the information seekers' needs.

The preferred reaction should be that the information and the information needs connect and fit each other like connecting puzzle pieces, resulting in a feeling of "eureka" or "success".

The intersection and connection between the information and the client's information needs should result in the creation of knowledge or more knowledgeable clients.

The antithesis of this is the client bombarded with jargon, information overload and technical hitches.

To assist the Academic Information Service in moving towards our preferred seamless, integrated user-friendly environment, we are running a digital information service project. Our vision is multi-faceted:

"To establish an integrated transparent, web-based system for the retrieval and manipulation of all types of information - including full-text and human expertise.

"To create a virtual environment for information handling

"To evolve towards the integration of our key business process with the teaching function of the university

"To increase the productivity of our clients -academics and students"

Many of the ethereal qualities within organisations such as

culture,
values,
vision and
ethics

operate as invisible fields. These fields can influence behaviour and development, and compel and organise particular activities or processes.

For example education, research and community-service based works together can combine to deliver knowledgeable, and competent professionals into the knowledge society.

We cannot see all the fields active within our organisation - but we can observe their effects.

Chaos and the strange attractor of meaning

The essence of the chaos theory is that seemingly simple rules can give rise to extraordinarily intricate behaviour, as witnessed by the endlessly detailed beauty of fractals or the foaming beauty of a river.

This secret heart of chaos has been revealed by using computers. The computer tracks the evolution of a system. The system careens backwards and forwards with violent unpredictability, never showing up in the same spot twice. But as we watch, the lines weave their strands into a pattern, and an order emerges out of this disorder. The chaotic movements of the system have a shape, which the New Science terms a "strange attractor" and this is an irrefutable indication of order which is inherent in chaos.

Margaret Wheatley in her book "Leadership and the New Science" pondered whether it was possible to identify such a force at work inside organisations. Is there such a force, a basin for activity, so compelling or attractive that it pulls all behaviour towards it and thereby creates coherence? She postulates that there are such attractors at work in organisations and that one of the most potent of these is "meaning". Meaning is a defining force in both organisational behaviour and life itself.

The strange attractor of meaning can be related directly to an organisation's values, basic assumptions and culture. Culture can be seen as the underlying force which makes organisational transformation possible.

This exploration into possible relationships between the New Science theory and the organisational transformation of the Academic Information Service has thrown new light on transformation in organisations and has opened new avenues of thought about organisational life for us.