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# **Digital Information Resource Management based on Self- Organization Theory**

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# School of economics and management of Xidian University

Speciality:

Information Management & Information System

Business Administration

Industrial Engineering

E-Business

Finance

# School of economics and management of Xidian University

Post degrees:

Management Science & Engineering

Information Science

Enterprise Management

Finance

Library

Accounting

## The outline of this report:

- (1) The problems of digital information resources management now.
- (2) The main introduced theory of this paper.
- (3) The analysis based on self-organization about digital information resources management ,it contains internal and external environment.
- (4) Conclusion.

## The research of digital information resource system involves such problems now :

- (1) The research procedure is split into some parts, lacking global view and consideration of internal & external connection.
- (2) Ignoring the dynamic change in the digital information resource management system.

# The problems to be resolved:

- (1) The feasibility conditions about self-organization on the development and utilization of digital information resources management.
- (2) Elements of digital information resources system and the relationships between elements 、 external environment and elements.
- (3) Functions and hierarchical structure of the digital information resources management system.

## The main application of this article :

### **Dissipative structure theory of Prigogine**

In self-organization theory ,Prigogine pointed out the opening system is away from equilibrium ,under this condition the system will be spontaneously from disorder to order, and change to a certain structure.

## The main application of this article :

### Synergetics of Haken

Haken thought that in the absence of external specific intervention, the system will access to the structure on space, time or function, the process is called self-organizing process. The evolution of each system are composed of many sub-process, there are a lot of competitions between each other.

## The characteristics of self-organization system:

- (1) It is an open system.
- (2) It must stay away from equilibrium.
- (3) The connections between factors of system is nonlinear.
- (4) The system reaches a new balance state through internal fluctuation .

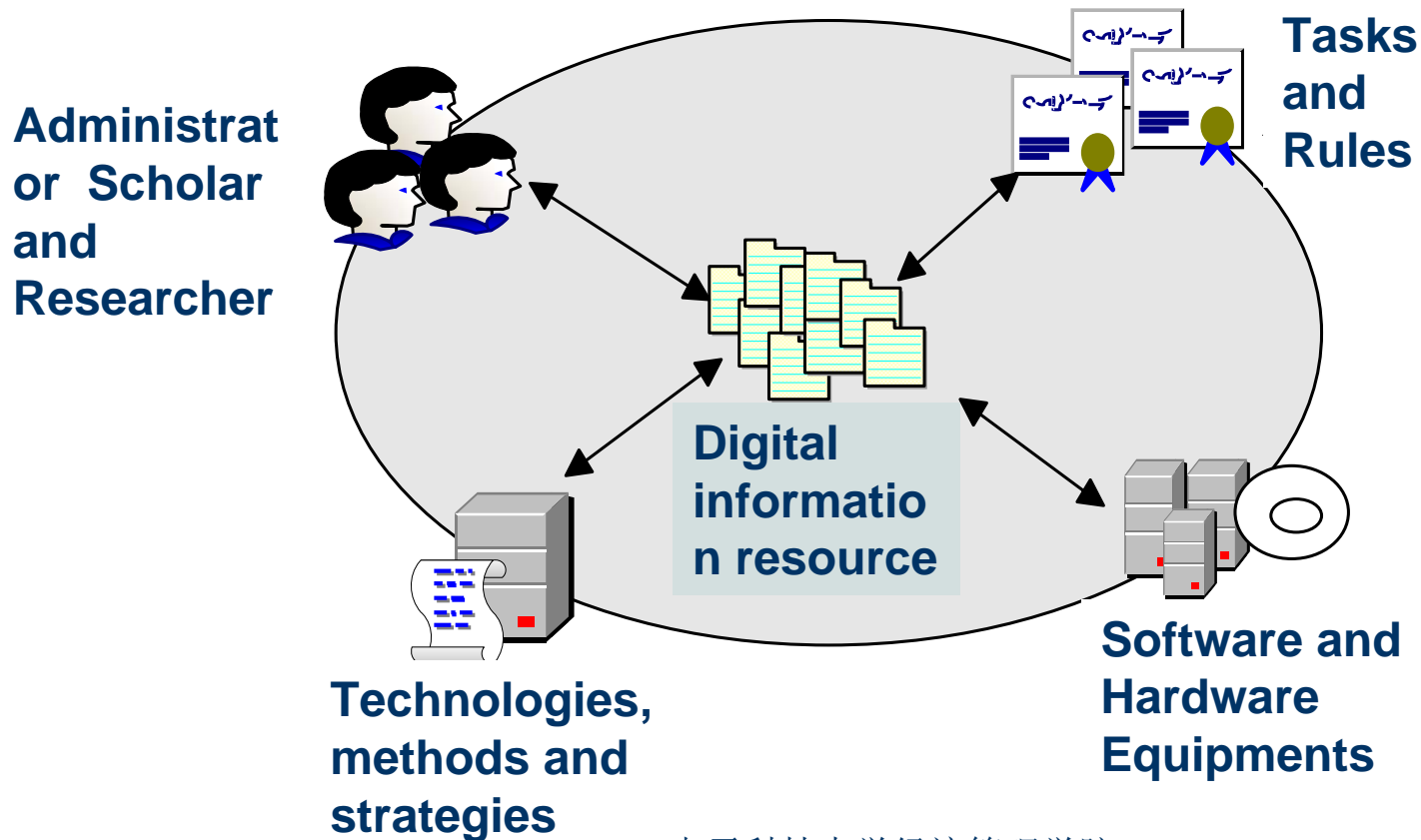
## The analysis based on self-organization about characteristics of digital information resource management system

- (1) Digital information resource management system has a special function of itself.
- (2) Digital information resources management system has a hierarchical structure.
- (3) Digital information resources is open.

## The analysis on self-organization of Digital information resource management system

- (4) Digital information resources management system is always away from equilibrium.
- (5) The role of variety of elements of digital information resources management system is non-linear.
- (6) There is fluctuation in digital information resources management system.

# Elements constitute Digital information resource management system:



## Digital information resources management system has five parts as following:

DIR ( Digital Information Resources )

A-S-R ( Administrators, Scholars, Researchers )

T-M-P ( Technologies ,Methods and Strategies )

S-H-E ( Software and Hardware Equipments )

T-R ( Tasks and Rules )

## Digital information resources management system has five parts as following:

Digital information resources management system can be described as:

S(DIR, A-S-R, T-M-P, S-H-E, T-R)

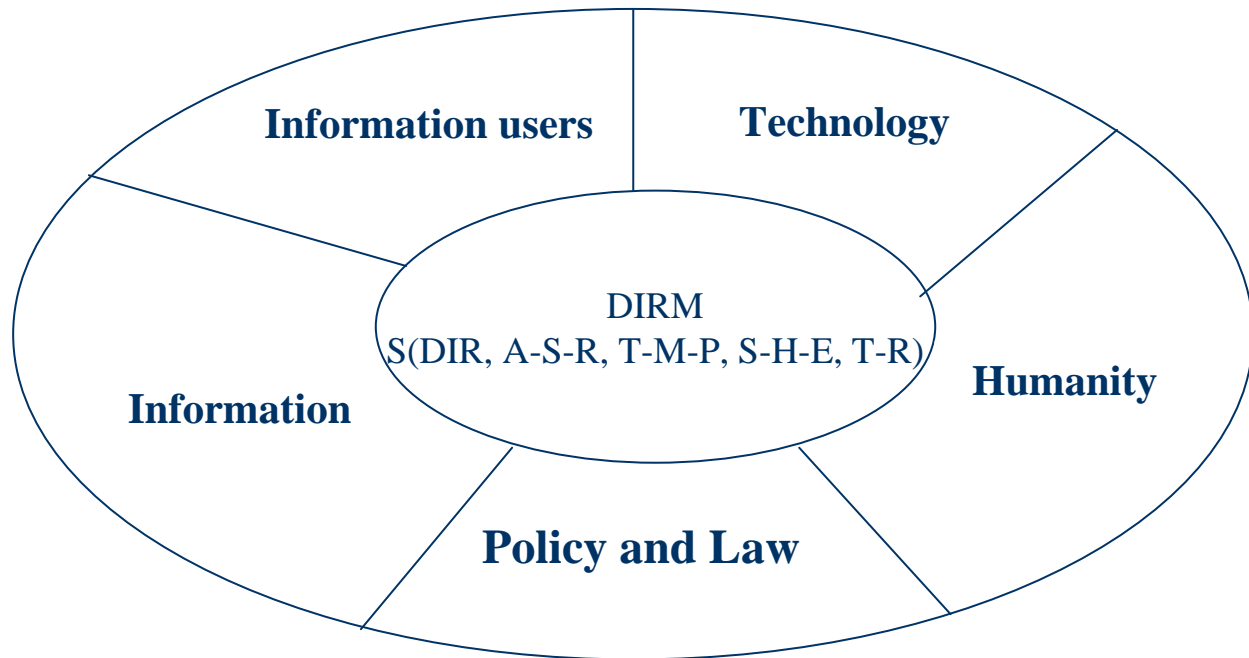
# Digital information resource management based on Self-Organization Theory

- (1) The increase of DIR content and quantity: the main reason for the increase of system entropy.
- (2) The A-S-R (Administrators, Scholars, Researchers): the main reason for the decrease of system entropy.

# Digital information resource management based on Self-Organization Theory

- (3) The T-M-P: making the system reach a new equilibrium state from process management, control and alteration .
- (4) The S-H-E: making system present a renovating trend .
- (5) The T-R: the criterions and control factors making system reach the equilibrium state.

# The external-environment of DIR management system based on self-organization theory



# Digital information resource management based on self-organization theory

- (1) The change of users' amount, kinds and demand affect DIR management directly.
- (2) The renovation of technology environment courses self-evolvment.
- (3) The information environment, in which information increase rapidly, is the main factor making entropy increase in external-environment.

## Digital information resource management based on self-organization theory

(4) The humanistic environment affect the change and evolvement in the system.

(5) The policy and legal environment has an restriction effect on the dynamic evolution in a certain.

# Conclusion

- (1) The Self-Organization Theory could be used with digital information resources management
- (2) External and Internal environment
- (3) Future work



# Thank you