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GENERIC CLASSIFICATION OF INFORMATION PROCESSES

1. Introduction

One of the main areas of interests within the field of Information Systems (IS) should be the identification and further analysis of information processes flowing within a given system. Such an analysis would help build a concept rich enough both to make sense of, and to guide work within the IS field, irrespective of whether that work is practical or conceptual. Such a concept needs to be at the same time broad enough to encompass a range of ideas about organizations and their information support and sharp enough to provide guidelines which are usable in practice.

This article presents a generic classification of information processes, from personal to social to organizational. The proposed models epitomize the transition of information processing from the level of an individual to the level of a group, and finally, to the level of the whole organization. It is clearly seen that information processes, including the human component – people – constitute a basic, subjective, component of any information system.

2. The Personal Process

An individual human being has self-consciousness. That means we can think about the world in different ways, relate these concepts to our experience of the world and so form judgments which can affect our intentions and, ultimately, our actions.

This line of thought suggests a basic model for the active human agent in the world. In this model we are able to perceive parts of the world, attribute meanings to what we perceive, make judgments about our perceptions, form intentions to take particular actions and carry out those actions. These change the perceived world, however slightly, so that the process begins again, becoming a cycle.

The model in fig. 1 describes an information process of an individual who selectively perceives his or her world, judges it and takes intentional and purposeful action in the light of those perceptions and judgments.

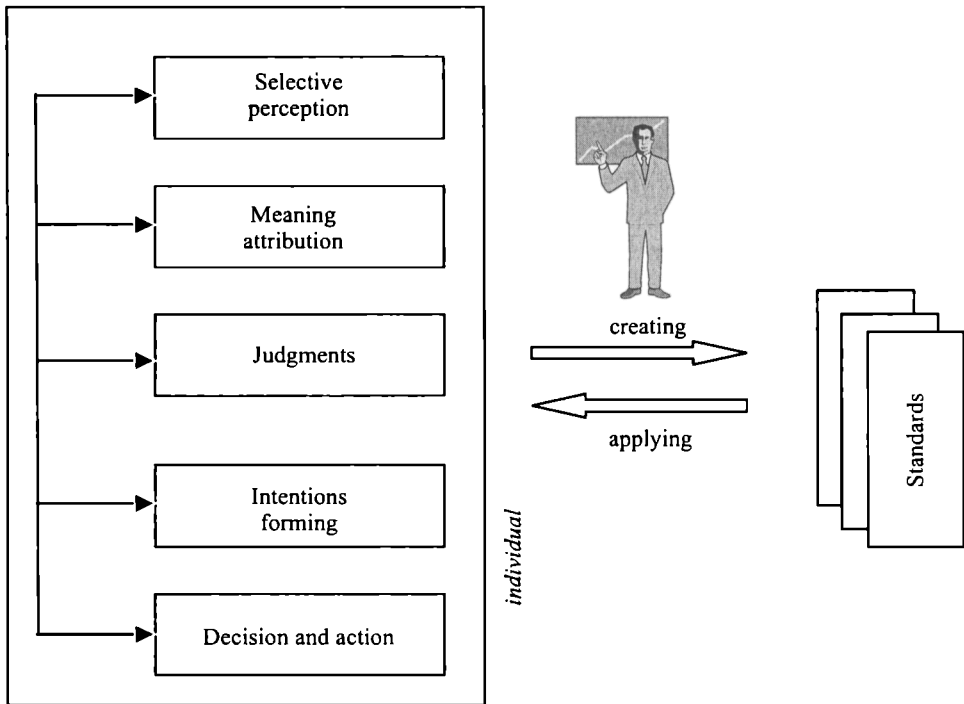


Fig. 1. An information process model of an individual

Source: own research based on [Hinton 2006].

This model requires two amplifications. First, we always selectively perceive parts of the world, as a result of our interests and previous history. A European architect visiting New York will tend to see the city as a concrete jungle with plethora of towering miracles. A sociologist will be amazed by the abundance of different races inhabiting the city.

Secondly, the act of attributing meaning and making judgments implies the existence of standards against which comparisons can be made (good/bad, relevant/irrelevant, nice/ugly etc.).

What is important, the mere fact of making the judgment will cause subsequent perceptions and attributions of meaning to be different from those which would have been made in the absence of that judgment. The judgment made may concern either what is perceived or the standards by which what is perceived is judged. We may begin to notice as significant something we have hitherto passed by, or we may begin to judge differently something we have always paid some attention to.

And so, if there is no ultimate authority for these standards, the source of them can only be the previous history of the very process being described. As a result, the standards will themselves change over time as new experiences accumulate [Unold 2005].

3. The Social Process

An individual's thinking and action have a profound effect on the mind set and actions of a very large number of people. We can assume that most of the great ideas were developed in some kind of dialogue with others. Although each individual retains at least the potential selectivity to perceive and interpret the world in their own unique way, running the risk of being regarded as "weird", the norm for a social animal with sophisticated language is that our perceptions of the world, our meaning attributions and our judgments of it will all be strongly conditioned by our exchanges with others.

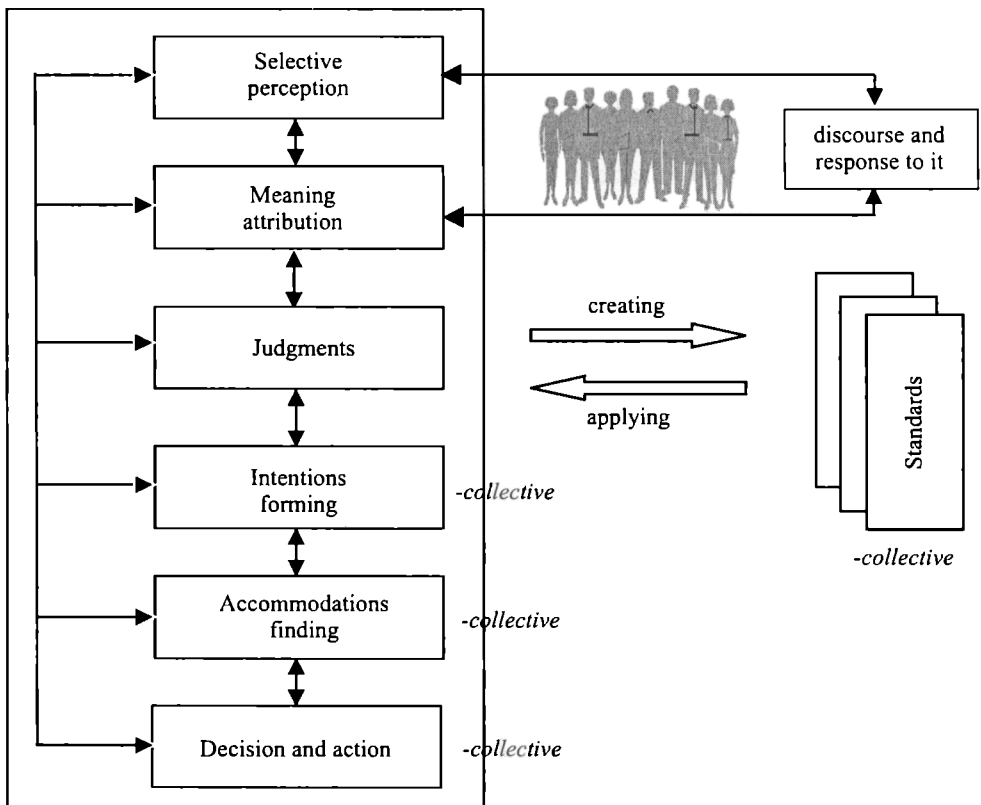


Fig. 2. An information process model of a group

Source: own research based on [Hinton 2006].

Figure 2 presents a modified, inter-subjective or social, version of the individual information process model presented in fig. 1. In it, previously personal cognitive acts are now embedded in discourse.

The never-ending dialogue is the most obvious characteristic of group life. It is the discussion, debate and discourse in which we all try to affect each other's perceptions, judgments, intentions, decisions and actions.

4. The Organizational Process

The organizational process will be one in which the data-rich world outside is perceived selectively by individuals and by groups of individuals. The selectivity is the result of our predisposition to select, amplify, reject, attenuate or distort the incoming information. It is a result of previous experiences and individuals will interact with the world not only as individuals but also through their simultaneous membership of multiple groups, some formal, e.g. a department in an organization, some informal, such as a group of friends. Perceptions will be exchanged, shared, challenged, argued over, in a discourse which will consist of the inter-subjective creation of meanings. Those meanings will create information and then knowledge which will lead to accommodations being made, intentions being formed, decisions taken and purposeful actions undertaken. Both the thinking and the action will change the perceived world and may change the appreciative settings which filter our perceptions. Thus the process will be cyclic and never ending. It is a process of continuous learning and will be richer if more people take part in it.

Figure 3 proposes a model which relates to the processes in which organizational meanings are created. It presents organizational information process as part of an organizational Information System. The model consists of the people as individuals and as group members. They perceive the data-rich world through various taken-as-given assumptions. The organizational discourse is the arena in which meanings are created inter-subjectively, leading to the attributions of meaning which yield information and knowledge. This is a very complex social process in which persuasion and/or coercion is attempted, battles are fought and scores settled. This whole process embodies politics as well as rational instrumental decision taking.

Organizations have to be able to encourage but at the same time contain such a process to survive. They have to enable assemblies of related meanings, intentions and accommodations between conflicting interests to emerge so that purposeful action can be taken. This action can be best thought of and expressed as a managing of relationships.

Formally organized information systems based on people, information processes, IT and telecommunications [Avison, Fitzgerald 2003] support organization members in conceptualizing their world. The technology also requires the availability of professional knowledge of the technology and its possibilities. This professional know-how will also include the knowledge to operate, maintain and modify the IT.

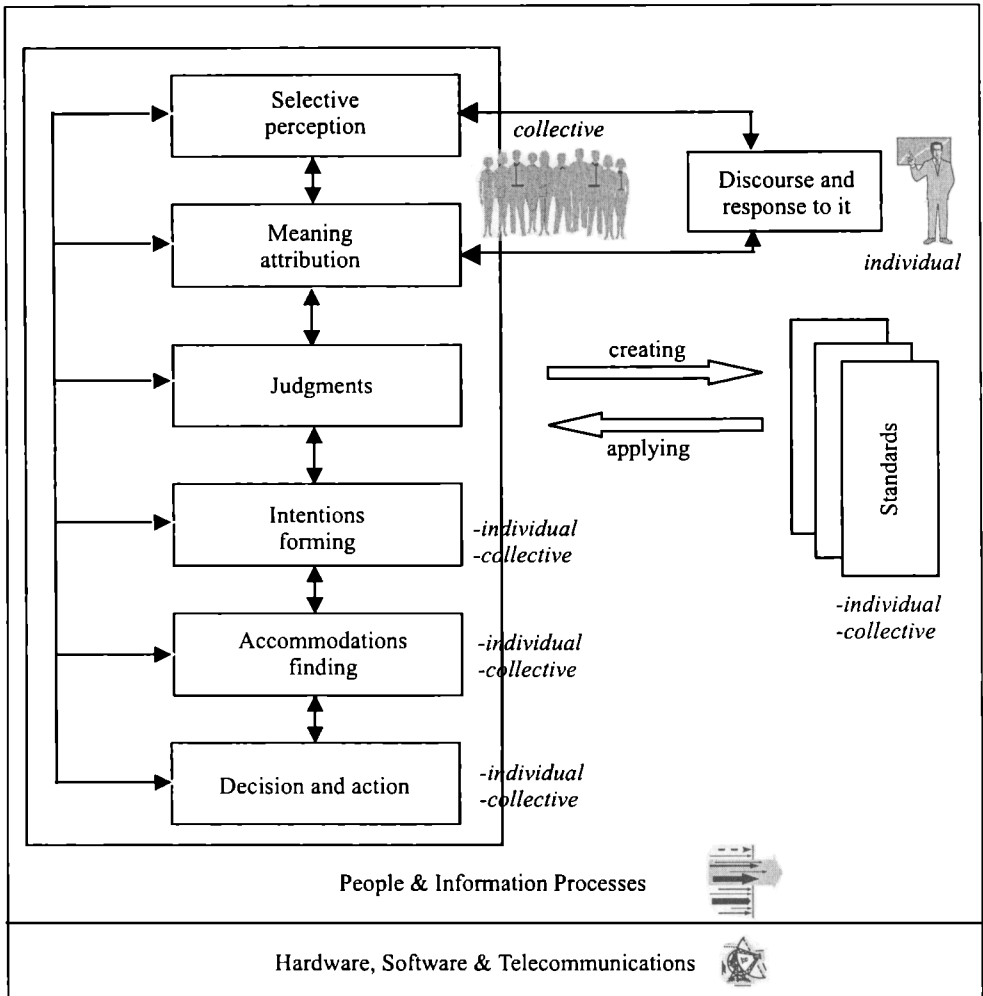


Fig. 3. Organizational information process as part of an Information System

Source: own research based on [Hinton 2006; Chaffy, Wood 2005].

Sometimes the “support” the technology offers may include, or comprise, taking over and carrying out actions previously in the hands of people – such as doing calculations or drawing graphs. This kind of automation is an obvious radical kind of support. However, more subtle aspects of support are likely to reside in the provision of processed data which enable the users to modify the way they think about their world – that is to say, help both to sustain and to change the perceived world [Hinton 2006, p. 70]. Hence, the strict connection between the organizational information process and the information system, presented in fig. 3.

5. Conclusions

Three generic groups of information processes, personal, social and organizational, can be presented in a model form. The basic concept here is that each process is composed of certain constant elements, situated in a different environmental context. The first assumption points to the selectivity of human perception. People think differently, relating their concepts to their experience of the world. The creation of meaning processes differently, depending on the social context. It can be viewed as an individual process or a social/organizational one. In the latter case people take part in discourse and they exchange their views and opinions. In the next step judgments are made, which leads to the formation of adequate intentions. Having found accommodations people, both individually or collectively, find a relatively safe ground for decision making and taking proper actions. This whole process of information acquiring and transforming it into a decision is part of any Information System.

References

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OGÓLNA KLASYFIKACJA PROCESÓW INFORMACYJNYCH

Streszczenie

Podstawowym, podmiotowym komponentem każdego systemu informacyjnego są ludzie i zachodzące w systemie procesy informacyjne. Wyróżnia się trzy ogólne kategorie procesów informacyjnych: indywidualne, grupowe i organizacyjne. Prawidłowa identyfikacja i analiza procesów może stanowić nieocenioną pomoc w tworzeniu modeli przydatnych zarówno w pracach teoretycznych w obszarze SI, jak i w praktyce życia organizacji.