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Aligning IS Design with Users' Mind Contents

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[1] ***Abstract*— This paper discusses the possibility of aligning information systems and their users' mind contents and its potential benefits. "Mind contents" here mostly refers to very common and daily habits of users. The study assumes that such habits including their background/unconscious processes and their outward manifestations define people's attitudes and capabilities generally, and specifically towards the system and system's usage. Therefore, initially the properties of those habits from a psychodynamic view are discussed. Thereafter, the possible relationships between those habits and the introduction of a new system and its impacts are suggested. Finally the study strives to propose ways in terms of general considerations and recommendations to design and shape the information systems in compliance with user habits only where the efficiency and performance of the user-system interactions can be improved.**

Keywords*— information Systems, users' habits, psychodynamic

I. INTRODUCTION

People intentionally or unwittingly expect new things whereby to be in compliance with their mind contents. Such preposition does not imply that, it necessarily means people only expect what they want. Sometimes and mostly unconsciously, they need new objects in their environment to project their negative feelings to it [SG3]. Moreover it is possible that they expect new objects as playing a parental role to guide and even punish them [SG4]. It can assist them to contain their internal of levels power and maintain their psychological balance [SG2, SG4]. And finally, they need new objects as means of continuing or perhaps, recreating their old habits, and sometimes in newer shapes. These habits [SG2, SG4] are an outer reflection of their ego defenses, and though not all are fixed and unchangeable [pg1], but totally have a very essential roles to maintain their internal balance. It means, changing habits more than that one can tolerate (varying on situation and individuals) can be perceived as threat, sometimes consciously, and always unconsciously. Such perceptions of threats possibly end up with resistant reactions outwardly, and can be inwardly sensed as anxiety.

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On this basis, introducing novel offers should be carefully taken into account. Information Systems (IS) has some properties (as is discussed in [SG4]). They are knowledgeable and alterative [PG1]. Hence, they have much more chance to reflect people minds. So, from one side, they, due to their nature, can be better fitted with people (i.e. their users) and, from the other side, people automatically expect them much more to be reflect their minds.

As a result, it would be a very acceptable project that IS designers take these issue into account when they are designing the system, whether as an aim for their resulting system in terms of being the system as much as possible fitted with people or, only being aware of such issues to better deal with human issues through development of the system e.g. mitigating or avoiding people resistance or obtaining a better user cooperation for optimizing system usage.

This study as a short communication focuses on a few line of discussion. To delimit the scope, it should be added that, the focus of this study is on the general considerations and recommendations which are connected to design activities. Thus, the question to answer is how the targeted services (as is defined and described in requirement analysis phase) should be provided to the users whereby the issues about aligning effectively to the users' mind contents has been appropriately taken into account. A somewhat similar discussion, though much more about requirement analysis, implementation and usage phases can be found in [Pg1].

II. PROBLEM, ASSUMPTIONS AND OBJECTIVES

To successfully design a system, knowing the requirements is a must. Although the requirements are mostly related to logical aspects of the targeted system' services; yet, a successful system needs to be properly operated by people i.e. its users. In organizational settings (e.g. for an enterprise system) this is in itself complicated [entrprs, usage].Therefore it is compulsory to know how people act and what they usually want.

To define information systems, the requirements are normally put into words as a set of technical specifications [req]. Moreover, sometimes for ordered systems (i.e. not predefined systems such as ERPs) requirement engineers may add a few more requirements to better consider the cultural issues within the organization. As an extra difficulty, over the period of implementation and usage, implementers also need to know the considerations and implications of human issues within the organization [SG1]. However here, as was stressed, the focus is on the design stage of IS.

Nevertheless, people act based on their mind contents. As is pointed in [SG4?], mind contents in this study mostly refer

to background/unconscious processes of mind which in its turn, mostly can be realized and manifested in work habits generally, and in a more specific manner, in ego defenses [ego defences].

It can be asserted that in spite of its varied and variable nature, such comprehensive set of habits and traits, totally and in a composition, serves as means of equilibration for the people and consequently for the organization [SG2]. As a result, *changing* such composition can be very difficult; the *event* that usually happens with its drastic side effects when a new system are introduced to the organizations [SG2].

As a priority for this study, the question is about how we can adopt a certain set of traits of users (if they are concretely known for a specific system or, if not, as general patterns of their potential audience e.g. for ERPs) to add to the flexibility of system through adaptations for those traits (cf. user attitude and traits discussed in [trait, attitude]). Admittedly, those traits are not necessarily rational and/or unconscious [SG1,2]. Specifically, those which are usually remained beyond of the scope of common requirement analysis and eliciting methods. Moreover, with regard to the [PG1]'s discussion about the ambivalence nature of human characteristics, to define these traits providing they retain their general applicability to all circumstances, it is suggested to avoid unjustified connecting to some allegedly positive and negative human values.

III. Formulation of the Problem

According to the previous section, people resist and probably reject a new system unwittingly if the new system cannot be merged with/reflect their mind contents (cf. SG4). To form such a merge, people should unconsciously connect to the system probably *through* perceiving it as a live and animated entity [SG1,3].

Based on this formulation, it would be an acceptable thesis that, a new system for being adopted effectively, should flexibly adapt to the people's (i.e. the current/potential users') mind contents, e.g. with providing options by which its users be able to choose their pace according to their usual and daily habits (mostly based on their unexplainable, i.e. unconscious, desires). Hence, such adaptation capability for a system to comply with users' mind or at least, not violating it [lapointe case] must be a critical factor for system success.

According to [PG1], the point, in this regard, is not about how people should do things about the system constructively (and, not destructively) from a rational point of view. In fact here, with assuming the existence of a consistent and prioritized list of requirements of the new system's targeted services and functionalities, these issues (i.e. contemplating users' traits habits) should have been previously resolved and, supposed to do not interfere or conflict with the development and implementation plans. On the contrary, it is arguable that, knowing such issues will potentially even assist and promote those plans (either development or implementation and usage) (see section [?).

IV. Recommendations for System Design

Based on the formulation of the problem, in this section, some general guidelines and recommendations are provided.

As a general statement, designers should design systems regarding the daily nature of the work. They have to consider the course of time and temporarily stops within that.

Furthermore, system should give small (or customizable) amount of satisfaction in short (or, as well, customizable) quantum of time e.g. a message that reports the finish of a certain (mostly, small) parts of the work. The *words* should be satisfying and the results can be accumulated and re-shown in later times, as far as possible. Likewise, it is suggestible that they be rewarded (at least, virtually and by the system words) *regularly* – with the purpose of forming and solidifying (proper) work habits.

It is better for people to always have, if possible, some (optional) works to do (because of keeping their system habits activated); and at the same time, not being very relaxed about time (for the sake of habituating to the system's parental roles which resemble their super ego values [SG4]).

System should slightly remind parental roles [SG3,4] and, offer options for people to choose the exact corresponding roles they like, certainly providing to be in compliance with the logic of the system. People usually may prefer to choose (depending on a very vast variety of personal backgrounds) their role based on their pace. Sometimes they need to follow and some other times, to control the system (or occasionally, if it would be possible, other colleagues *through* the system). Although the exact way to use these general traits of people is not known yet, but to start, two concepts may be taken into account. Firstly, such options should have been analyzed in advance, for not being harmful in respect to the system logic and services. Secondly, and as an extra suggestion, if the system can do this during run-time i.e. dynamically, then it means producing more opportunities, as well as evaluating user options (e.g. via simulation) to find out whether they will hurt the system's standards/outputs or not.

Users' level and positions should be indicated and stressed within the system (cf. identification processes discussion in [SG1]). The new system positions (probably related to the system/access levels and/or even official organizational posts) should be offered to people (e.g. as a reward) and permit them to keep it persistently (see anal personalities [Gabriel], [psych].

People supposed to have some *options* in the system to be able to freely increase *or* decrease the level of interactions they have with others; providing to obey the limitations of the system logic, of course. Thus, people may choose, according to their pace, experiencing more or less tension through interacting with others. This capability (i.e. having such options) not only facilitates users to balance their (psychic [psych]) energy (e.g. some people need more tension to work efficiently, some less), but also to retain their desirable habits as well (e.g. staying to be extrovert or introvert in accord with their personality).

V. Critical Discussion

Sometimes, may it seems that, putting extra indulgence to the aforementioned issues may change IS into a computer game. However, for the time being and from the current

perspective, there is no need to overact, and such issues can be moderately added to the system.

Nevertheless, possible side-effects are unknown at this time. Firstly what if such recommendations and options damage the system's functionality and objectives? A possible answer is that this is something the designers can/should limit beforehand, according to the logic of their designs. However, it is expectable that not all aspects can be logically and rationally anticipated and resolved, in advance.

Secondly and more specifically, what if people's freeness (according to their available *options*) actuates and leads to non-efficient results? In this way, at first glance, it seems obvious that such degree of freedom (in system settings) must be avoided. Although, it can also be argued that due to complications of users' cooperation and coordination for system usage [usage], it is not that much *obvious*. It means, form one side, not always we can find the best way of coordination regarding people's personal traits. And from the other side, sometimes a strong and fit coordination among people worth as much that some of probable resulting dysfunctions are ignored. Besides, it can be the case even for one individual in which a motivated user can likely be desirable even if he does not do some of his tasks optimally; particularly if those tasks are not very critical.

As a complementary answer, it should be stated that, due to the lack of accurate field data and only based on common sense, such harmful effects are not very likely if the design is appropriate. In addition, as was mentioned earlier, the system is expected to be able to evaluate different optional paces and compare them with each other by way of forcing users (e.g. thoes with less performance) to do tasks in prescribed ways (as the system suggests), and then, the obtained performance results can be compared with their personal selected paces.

However, two points should be taken into account in this connection. Firstly, as was mentioned, the rational analysis of what can lead to dysfunction should be done in advance, and perhaps avoid doubtful possible situations. Secondly, the main horizon here is people should have more chance to accustomed to the system and the way of such custom should be of course limited by the plans.

The other point that can help greatly is to show ways people unwittingly their pace. Then in this manner, much more of the aforementioned problems potentially be resolved. Though, still a minority for people according to their past backgrounds and/or their current situations may unintentionally choose the ways they are less productive or more potential to give up. The first point is not under the focus here, because the productive attribute in terms of psychological singes and incentives can be analyze thoroughly beforehand. It means, if someone unintentionally or intentionally choose the way that he would be less productive, system finally can know and evaluate the problem. The other one here is more important, in which people unwittingly choose a style within the system (' options) that finally it is less attractive for them. For instance they are not very tidy persons, however they want to show that, and then arrange the system (e.g. user interface and menu items on the screen) in an orderly manner, which unconsciously lead them to avoid the use of the system. Though this example is very imaginary and in real world occasions s expected to see much more complicated and ambivalence views, however, the final result is problem.

VI. Conclusion and Limitations

This study attempts to find and suggest better ways to align system with user mind contents. However, there are several major limitations. As was discussed previously, the main impediment is about the ambivalent nature of whole conceptions from a psychodynamic point of view. So, after all, it cannot be asserted and even hypothesized that aligning with user habits *necessarily* improves the user-system interactions efficiency and consequently the system performance. It seems this depends on certain setting and conditions regarding the specific individuals involved in, the inclusive organization's culture and so on. Therefore, this matter is articulated in the current study as "[making effort for] aligning with users' mind content *only where* the efficiency and performance … can be improved". So, such condition (i.e. aligning for the sake of improvement) in itself is a subject of further inquiries.

However, there are a few likelihoods for its usefulness. Firstly, as was mentioned, the very likely common-sense presumption is the existence of such alignment, totally, is better than the lack of it. Such common sense presumption of course can be endorsed by a large amount of literature which assert than positive attitudes about the system, can improve the system acceptance and usage [ ]. However, it should be noted that the *attitude* toward the system and "intention to use" [TAM] are never exactly the same concept as *user's mind contents* toward the system, which has much more unconscious implications.

Secondly, as another assumption, it is again very likely that, the designer's awareness of such alignment assist him considerably. The justification is, the awareness possibly renders more options and opportunities for him/her, so that it consequently leads to a better result in terms of system success.

And thirdly, the proposed recommendation has outlined a basis for finding and choosing *constructive* alignment, in terms of direct (system's) output, types of expectation which people can have and the quality of enacted social relationships (e.g. cooperative or conflicting) through the system.

As a final word, although, the investigation of the study's assumptions is an immediate candidate for future research, again, the ambivalent nature of most of those (i.e. the study's assumptions) should be carefully attended.

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