Aligning IS Development with Users' Work Habits

Abbas Moshref Razavi, Rodina Ahmad

Abstract—As a primitive assumption, if a new information system is able to remind users their old work habits, it should have a better opportunity to be accepted, adopted and finally, utilized. In this paper some theoretical concepts borrowed from psychodynamic theory e.g. ego defenses are discussed to show how such resemblance can be made without necessarily affecting the performance of the new system. The main assertion is a new system should somehow imitate old work habits, not literally, but through following their paces in terms of the order of habitual tensional states including stimulation, defensive actions and satisfactions.

Keywords—information Systems, users' habits, psychodynamic

I. INTRODUCTION

THIS study aims to draw some theoretical issues on how can align the development of a new information system with the existing work habits of the workplace. It is assumed that this alignment causes a better incorporation of users' needs into the system, as well as convinces them to adopt it. Moreover, such a discussion is expected to improve the general quality of user-developer interactions.

The study is mostly relied on a few assumptions and conceptualizations, which are indicated in the next section. Among them the main one is that an *alignment* in the forms of non-literal imitations of old work habits (by the developers, through the development process as a whole and finally, within the resultant system) is something advantageous. Hence, the objectives and approach of this study are based on these assumptions, though their limitations are also pinpointed. In addition, the next section includes the definitions and properties of the significant notions of the study, namely *work habits* and *ego defenses*. In section 3, the main argument is presented by stating that *habits*, as well as *work habit*, *are* ego defenses, though some conceptions are made in this regard to delimit the notions of ego defense in a proper practical/outward format. According to the presented argument, in section 4, some recommendations for practitioners are provided. Finally, in the conclusion section some limitations and cautions are mentioned in this connection and, further studies are suggested.

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II. FORMULATION OF THE PROBLEM

A. Objective and Approach

The main thesis of this study is if developers are familiar with users work habits in the whole pace of development, then they will be more potential firstly, to elicit a more effective list of requirements and secondly, more capable to efficiently interact with users. On this basis, more performance for them (i.e. developers) from one side and a higher chance for the system adoption from the other side are expected. In addition to the effects on better requirements and developers-users interactions, we assume that even a rough similarity between users and developers work habits likely cause such improvement to some extent. Albeit, this study provides no direct evidence for this assumption, it can still be regarded reasonable according to common sense (people learn from each other very easily). Moreover, this study presents a detailed discussion on the psychodynamic nature of work habits *in terms of* ego defenses.

Since, irrespective of whether and how developers imitate users' work habits in their pace of developments and/or in the final product (i.e. the new system), these insights are assumed to assist them to have more efficient interactions with users.

The general approach and assumptions for this study are as follows. Firstly, a (full/arbitrary) set of habits is able to show the whole personality of individuals (and even groups [4]) particularly in a dynamic and *outward* manner, despite it is fully rooted in their background and *unconscious* mind processes. We will back to this matter in subsection III.*A*. Secondly, this study provides ego defenses as general means of realization of habits. Afterward, work habits are again introduced as ego defenses, particularly those ones which are realized (developed, adapt and activated) within workplaces (see III.*B*). Finally based on this insight (i.e. conceiving work habits as ego defenses), it is assumed that aligning the system with users' work habits, providing no sacrifice of performance, can assist users to adopt the system. Such alignment can be occurred in the system definition, in the pace of development processes involving developers and users and eventually in terms of improvement of users-developers interactions. These issues are discussed in sections III.C and IV.

B. Terms and Definitions

The definition of work habits can be based partly on official work procedures, partly on organizational culture directly connected to work procedures (including workarounds) and finally individual or social traits related to the work

procedures. Hence, all of these can be considered as the components of work habits, because they all contribute to form habits in workplace. This classifications is also explicitly refers to different constituent domains of work habits, that *individual* is a consequent of all those. Such a definition is in compliance with our proposed assumptions as well as definitions are provided in [1].

As the recent study (i.e. [1]) reveals, work habits are considered very influential (for example on performance) however, have not been precisely measured and then operationalized. At this point, some definitions are quoted from [1] to clarify the subject as is known in the contemporary literature. "Work habits are patterns of behavior people learn over time that can facilitate or interfere with job performance" Motowidlo et al., 1997, p. 79, and "Work habits can be viewed as a type of scripted behavior where the script is the cognitive structure capturing the learned associations between behaviors and goals", Verplanken &Orbell, 2003, through [1]. In these two definitions, the former does not provide any ground for the nature of the *patterns* of behavior. The latter refers to the *learned* behavior with respect to the goals, though still, does not adequately pay attention to dysfunction cases of work habits [10, 11, 12]; namely *learning* something that *is* work habit (because it is realized within workplaces and towards work' activities) and yet, does not result in prescribed goals (unless we consider the goal concept including personal dysfunctional intents as well). This aspect of work habits' inefficiency may be seen in: "Although work habits are likely to be characterized by efficiency (Verplanken & Orbell, 2003), they may not represent the best or most effective ways of handling situations at work" (Motowidlo et al, 1997) through [1]. By means of this statement, the authors admit the existence of dysfunction cases, but still the emphasis is more on rational/desirable (positive) aspects of work habits. As an explanation for possible conflicts between work habit, prescribed goals and performance, notice on "…individuals whose work habits interfere with their ability to behave in accordance with good performance would be more likely to require self-regulatory strategies to maintain goal-directed performance". Such a recommendation (i.e. resorting to "self-regulatory") neglects possible reasons of the *interference* that originated from the dual nature of goals and performance form one side and work habits (' dysfunction cases) from the other side. Another remarkable quote which may be referred in this regard is "we remain convinced that work habits can directly influence performance in some situations…", that it leads to further discussion about situations in which *both* (i.e. work habits and performance) are in convergence concerning their dual nature (cf. [9]).

At this point, some other aspects of work habits are noted according to [1]. "Individuals are likely to use work habits *automatically*, *unconsciously*, and in an uncontrolled fashion" (Verplanken & Orbell, 2003) (*italic* stresses are from these authors). This property directly refers to the unconscious quality of work habits. Their other aspect is about the forms and patterns of behavior that shaped them. "Work habits

include characteristic motivational responses such as choices for the amount, intensity, and duration of effort to expend; tendencies to approach or avoid certain situations; procrastination; or persistence in the face of adversity" and "work habits also include characteristic responses that are not necessarily motivational in nature (e.g., an officer who has been trained in the best way to deal with a problem subordinate, but occasionally reverts to pre-training habits of reacting with hostility)". As another aspect, "Task work habits are characteristic responses to situations that interfere with or facilitate the completion of tasks… [which] are predicted by both cognitive ability and certain personality variables". After all, work habits are influential so that "Motowidlo et al. replaced motivation with work habits, which they defined as stylistic ways people handle different kinds of situations that occur on the job, learned as their basic tendencies (personality traits) interact with their environments over time". These properties of work habits, including motivation, tenacity to finish an action along with a certain degree of intensity and duration (even if it is useless; resembling obsessional rituals [2], p. 437 also see [13]), avoiding certain situations, predestination, regression, potential double (contradictory) effects on work tasks (i.e. *interference* as well as *facilitation*), and dependence on personal traits all are of great importance when the concept of ego defenses will be discussed in the following sections.

Therefore, again, here we define work habits as those habits whose formation have been inside workplace or older habits which specifically adapted for work place.

C. Risks and Limitations

There are several noticeable limitations for the proposed approach. As the first one, what if including such habits directly in the requirement list causes the new system retains the flaws and inefficiencies of the existing work procedures? The other pitfall for the new system is where compliance with the old work habits causes a decrement of performance for the new system. For instance, if the current workplace is very stressful, imitating such habits is very likely potential to increase the conflicts. This is the case for the presence of many other bad habits within the workplace, such as denying real situations, being too much conservative, lying and betraying.

However, in normal and usual cases, it can be argued that such imitation (of the extant work habits by developers) in a premeditative manner possibly provides a common ground and framework for the meanings of the developers-users interactions. Based on such a framework, well-defined actions for both sides (particularly, the developer side) are expected to occur, which in its turn, finally leads to a better acceptance of the developers. Since, as is shown in [14], the system's *advocates* are associated with the system itself and its features; better acceptance of the developers means better adoption of the system.

This is usually the case when developers closely work along with users and are affected by the culture of the

environment, so that they automatically and unwittingly consider work habits over the course of development. However, this *togetherness* usually brings about a well-known problem in that this mutual affections very likely cause a non-optimal system performance. Therefore, for practitioners it should be added that, using the proposed approach requires a very careful comparison and collation of all stakeholders' requirements with the existing optimal solutions. Although such a collation has always been emphasized; yet, the focus here is to retain and include an imitation of habits, as much as possible and even seemingly, in the new system definition.

III. DISCUSSION

A. Habits and Ego Defenses

In this section, habits (in general) and ego defenses are discussed to show their similar characteristics. However, beforehand, two points are reminded. First, though, they are admittedly two different concepts, the purpose is to show ego defenses may form the underlying ground for habits and on the other side, habits are usual realizations and manifestations of ego defenses. Second, this discussion permits us to use more solid and comprehensive theoretical foundations of ego defenses to analyze habits (generally) and afterward (and in the following sections), work habits, more effectively.

Initially, habits represent a dynamic and causal view of personality. This is dynamic because habits are (mostly) practical by definition; despite the fact that some habits may be (more) internal such as inner feelings mainly in the forms of obsessional thoughts. Nonetheless, obsession can be regarded as an active habit, even if sometimes, it does not have noticeable manifestations (i.e. it is in the form of unwanted thoughts that regularly and periodically return).

They show the *personality*, because most of individuals' traits can be manifested over their execution. Moreover, they (i.e. habits) shape personality (in the sense of identity, cf. [9]) because any individual can be distinguished by them. Habits are also important to describe personality because they show the similarities along with the contrasts of people in terms of revealing common behavioral patterns and, at the same time, different approaches and attitudes. It is, as such, provides a ground for classification (of personalities.) Therefore, habits can classify, through their common patterns and shared aspects and, differentiate, by different history and pace of actions for any individual, both simultaneously and in a very dynamic manner.

Such view of personality is dynamic *and* causal, because it is able to show the dynamic causality of behavior, most of time clearly. They explain how and why something happens in individuals' life. *How,* because habits are inherently practical. In fact, the term "habit" mostly refers to observable traits and attitudes e.g. a practice, anything *seeable*.

Why, because usually it is possible to find a few conscious reasons or, if not, some unconscious justifications [2, 3] for interpreting habits.

In this frame, habits (whether internal in terms of feelings and thoughts without considerable manifestations or, external i.e. realized in behavior; though here the focus is on the latter) can additionally show a *configuration* of people' status (individually or socially, see [4]). As such, they are capable to define equilibration processes for the inclusive psychological or social systems as well; [4, 6]. In this view, habits act defensively against changes in the status quo, if people perceive danger. It might be better to say, they are *always* defensive (see the following paragraphs about the relations between habits and "ego defenses"), but in threatening situations, they are *more* defensive. This perception of threat usually (and more effectively) is internal and unconscious; two different perspectives can be found in [18, 19].

This defensive nature may be discussed in many ways. Firstly, this is defensive merely because it releases psychic tensions [2, 3]. Habits can created, adapted or reactivated in response to new situations (see regression [2], p. 319, as a specific sense, though all other ego defenses can be generally contemplated in this way); and new situations are usually threatening, thus, they may inherently be conceived defensive. In addition, as was pointed in the previous paragraph, they can also be transformed into a more (aggressive) defensive style whenever needed [2].

In this frame, to conceptualize and delimit the notion of habits (in general), ego-defenses are considered as an equivalent. This is somehow an arbitrary proposition. For example, a trivial habit can scarcely be regarded as an occurrence of ego-defenses. Notwithstanding, through psychoanalytic interpretation, even occasional, minor traits and attitudes may easily be related to a few (assumed) ego defenses. For this conceptualization, the main rationale is all the aforementioned properties of habits are also applicable for ego-defenses. Thus, ego-defenses can generally be used, at least, as a *placeholder* of habits as well.

Ego-defenses [2] or defense mechanisms [3] are "specific defensive process operating outside of and beyond conscious awareness. It is *automatically* and *unconsciously* employed in the endeavor to secure resolution of emotional conflict, *relief* from emotional tension, and to avert or allay *anxiety*. A given *dynamism* is evoked by the ego as an attempted means of coping with an otherwise consciously intolerable situation." [2], p. 6 (*italic* stresses are from these authors). They are classified in a wide variety of ways, including adaptive or maladaptive, primary or secondary, usual or unusual and, healthy rather pathogenic.

To justify the equivalency of habits and ego defenses it is required and sufficient to show that the unconscious nature of habits (rather its observable appearance) is very ego defense. Nevertheless, ego defenses are realized as periodical thoughts, feelings and actions to *generally* defend the ego against perceived threats [roles, ego] and *technically*, release tensions. Regarding (or even regardless of) their defensive nature, they are unconscious mind contents (cf. [8]) *plus* habits; or habits are their manifestations.

As a final assertion for this subsection, referring to the mentioned definitions of (work) habits which signify, like ego

defenses, their unconscious roots, it can be stated that both are the same notion, so as, in *ego defenses* the emphasis is on their *inner* dynamism and unconscious roots and, in *habits*, is on their *outer* dynamism and actual deeds.

B. Work Habits as Ego Defenses

The next part of the discussion is about to shift from the general notion of habits to *work habits*. Such shifting requires several considerations.

According to the proposed formulation, work habits should be considered as a subset of ego-defenses, which are *realized within* the workplace. In this view, the connection of the subset with the whole set of ego defenses, as well as how and which parts or aspects of those (i.e. the subset *and* – perhaps - the whole set) and whose manifestations are able to provide the means of work habits, are discussable. For now, we do not assume there will be any new ego-defense *dedicated* to workplaces. On the contrary, they are supposed to be, *developed* from the present (mostly, early life) ego defenses specifically for the sake of workplaces, *adapted* from the existing ones regarding work situations (e.g. via changing the stimulus or objects *and* keeping the same pace) or, just *(re)activated* old habits targeting towards workplaces' issues. Irrespective of the origins, they totally connect to and provide a means of individuals' (organizational) personality and, contribute in the organizational culture as well (cf. [4]).

As was pointed out, the next issue that needs clarification is which parts or aspects of the whole processes of ego-defenses may specifically define or result in work habits. By now, and as the current arguments imply, no limitation is applied except this preposition that work habits are something that all their aspects can be incorporated, analyzed and interpreted through the concept of ego defenses and its relevant constructs (see [2]) and, not necessarily vice versa. In other words, work habits, in nature and for the sake of interpretation and analysis, *are* ego-defenses whether these defenses have been developed, adapted or activated regarding the workplaces issues i.e. those issues mentioned in the definitions of work habits.

As an additional consideration, work habits, same as ego defenses [4], may be in shared forms. This is something obvious regarding the nature of habits; people simply, easily become accustomed to each other, and undoubtedly, it should occur within the workplace as well. Nonetheless, such shared aspects of work habits are noticed less by researchers, and they (i.e. work habits) are mainly referred to as *individual traits* (see the quoted definitions again). These are not merely *shared* in terms of similar social behavior and values, but also can be in the form of complementary roles (cf. [4]). Since, this study does not aim to contemplate the topic in its very social nature, a detailed discussion about this is beyond the scope.

As a conclusion for this subsection and based on the presented discussion, *work habits* are those ego defenses that are formed within workplaces and organizational settings or those already-existing which are activated [18]/adapted to the work issues (e.g. work procedures, work culture, etc.).

C. IS Development and Work Habits

IS development here refers to all phases (or disciplines, in iterative/incremental development process models such as unified process [20]) in which software systems are being prepared and became ready to use. Among them, business modeling and requirement engineering phases (or disciplines) are of great significance from the current point of view. This is due to the fact that they provide the means of system definition, that is, an appropriate place to take users work habits into account. Notwithstanding, because of this significance, the authors intend to inquiry the topic specifically with respect to system definition phases and activities elsewhere and in an appropriate detail. Moreover, business modeling as is mentioned in software engineering literature (e.g. [20]) is an optional activity providing that a clear requirement is not ready yet. Hence, it would be preferred to study business and organizational modeling apart from system development and, as a major standalone subject. On the other end, system implementation (i.e. software deployment), maintenance and usage are also sometimes considered to be outside the course of development.

As an initial attempt, design stage and activities are discussed in [8] in terms of major design decisions that are required to comply and be aligned with users' traits. Lastly, software implementation (mainly programming) per se is neutral with respect to users' needs, but also it is indirectly related to them by way of requirements, design and test activities.

After all, for the purpose of this study, the focus is first on the course of development as a whole; and the second is on the pace of development as is practiced by developers. This is due to the assumption that an aligned pace of development with user work habits will possibly produce an *aligned* system in that sense. As an additional one, it is reasonable to assume that aligning with user work habits may also assist system developers to have a better performance. The latter assumption is partly relied on an expectancy that such an alignment results in more efficient interactions between users and developers (as a relevant case, see [17]). At least, a mere awareness of users' work habits, as a salient aspect of the inclusive organization's culture, should be worthwhile.

Furthermore, another expected outcome is the *aligned* system will have a better chance of acceptance in terms of successful implementation and usage. It is not only because of a better incorporation of the existing work habits into the system definition; yet because of a better relationship with the system *advocates* (e.g. developers) as is reported by [14], most likely mitigates potential resistance to the system.

D. Ego Defenses as Means of Alignment

Another topic to discuss is about how the notion of ego defense is able to provide a means for aligning the new system with the existing users' work habits.

If a set of (*shared*) ego defenses can stand for psychological/social equilibration processes in organizations [4], the same may also be assumed for work habits.

Pertinently, the assumption is, while introducing a new system, the habits related to the old procedures of work (namely, *work habits*) are being threatened to be modified and consequently, they (i.e. work habits) will be shaped in more intense forms to resist to the new system. The point is, this resistance is mainly *unconscious*. In fact, such a preposition (i.e. the mere presence of work habits *unconsciously* impedes organizational change programs like information systems adoption), as such, can improve the understanding of the resistance phenomenon (for another remarkable formulation of the phenomenon in terms of ego defenses, see [18]).

However, the implications of this preposition are somehow mystifying. Specifically, it implies that firstly, whether the manifestations of the work habits are suspended, working as usual or transforming into intensified forms, yet, their unconscious contents/roots in terms of background mind processes mainly operating as ego defenses are *active* and resisting. Secondly, it is strongly assumed that less interference in the existing pace of work habits (by the new system's work concepts and procedures) even if they are apparently changed but their (substitutes') pace is somewhat the same, result in less resistance. This statement is due to the very mechanism of ego defenses as well as (work) habits for releasing psychic tensions (as was discussed in the previous sections; and also see [4, 5, 6, 7]). As an extra result, the unconscious processes of work habits are more resistant than their apparent manifestations. It means to deal with user resistance to a new system containing those unconscious processes are more important than monitoring the apparent practice of work habits in the new setting. In other words, the question is, if for example a new system transaction wants, for the sake of a better usage, to directly or indirectly remind the users an old (manual) work habit, then, which parts or aspects of that work habit are more appropriate and effective to choose concerning their connections to the users' unconscious mind processes (individually *and* socially [4, 6]).

To clarify the provided argument of the previous paragraph and, to avoid having a discursive discussion, we refer to the term *pace* as a specific pattern of (work) habits as well as their related ego defenses, which is realized in a particular organizational setting and by certain people (individually or socially). This specific pattern especially includes several cycles of *stimulation*, *actions* and *satisfaction* (cf. [7]). As can be inferred from the definitions of several ego defenses (e.g. particularly *conversion, compensation, displacement, disassociation, internalization, introjection, inversion, projection, rechanelization, substitution* and even *regression*), they are mostly formed by changes in existing ways of stimulation, actions and/or satisfaction whereas the other most/major parts are remained unchanged. Although occurring these changes are due to some *specific* purposes (i.e. the aims of the ego defenses as are mentioned in their definitions), still subsequent alterations are possible providing that the *original* purposes will be preserved. By now, as a general consequence, developers are advised to consider the paces of old work habits with respect to stimulations (something lower level and more unconscious than motives, incentives), behavior including actions and reactions and, satisfactions, separately. We will return to this in more detail in the following section.

Sources of *stimulation* within a workplace can be work alerts or any other types of events pertinent to individual traits and/or the organization's cultural issues [12, 13]. Generally, any situation causing tension can be considered as a source of stimulation. Thus, for instance, any work stress or "perceived threat" [14] as well as work incentives e.g. rewards may generate (or better to say, increase) tension, and then, cause stimulation in organizational settings. The raised tension should subsequently be released through means of ego defenses (see the definition) and work habits (see the proposed conceptualizations). They yield their manifested behavior in terms of *actions* and *reactions*, which leads to the final result i.e., of course., the *(relative) satisfactions* by releasing the raised tensions. It is important to note that in this formulation, there is still no discrimination between the roles of positive stimuli e.g. rewards and the negative ones e.g. perceived threats.

Furthermore, the defensive styles of ego defenses (by definitions) and work habits (as was discussed) imply that any change into their pace in terms of changing the aforementioned components (i.e. stimulation, actions and satisfaction) will cause firstly an imbalance of the general mechanisms of relieving tensions. As such, it means the (psychic) organism (whether individuals, groups or the whole organization) will attempt to find other ways to release its (usual) tensions; preferably as have been practiced before. Secondly, the organism likely strives to directly attack and reject those new changes. Thirdly, it would be most probable that, as a first attempt, the organism intend to use the defensive nature of the *current* work habits through transforming them into more intense shapes e.g. showing more sensitivity or obsession in doing those. These three main categories of responses are mostly concluded from the general formation mechanisms of ego defenses [2, 3], which shape different defenses including *regression* specifically and generally other defenses e.g. *conversion, compensation, reaction formations* (as means of intensifying an existing trait into an opposite direction), *displacement* and *substitution.*

As a final result, maintaining the current paces of work habits, as much as possible, should likely dissuade users to put intense reactions into practice against new changes and so, potentially avoid an exacerbation in such change programs [14, 15].

IV. RECOMMENDATIONS FOR DEVELOPERS

Based on the proposed discussion, some recommendations for practitioners are provided in this section. Nevertheless, to distinguish this work from [8], as was delimited earlier, the emphasis here is on the quality of developer-user interactions specifically throughout the stages of requirement eliciting, test and deployment.

As a common guideline, the general appearances of the old work habits should somehow be retained, at least to the extent of implicit and indirect resemblances. Although, it is admitted that this recommendation is not always possible *and* optimal (e.g. consider old work habits that are very unpleasant, inefficient or conflicting).

Firstly, possible sources of stimulation within organizations are common task alerts, superior directions, organizational regulations, cultural norms and so on. Respectively, developers should be aware and careful about any factor causing tension. A (not necessarily, literal) simulation in terms of keeping those factors' aliases and titles, logic, forms and sequences of appearance, etc. can mostly be feasible by developing or customizing the information system under consideration.

Secondly, the sequence of *actions*, as such and, regarding the fact that they release individual and social tensions, are noticeable. Moreover, they provide a means of knowledge, which assists people to maintain their safe position, through the equation of "knowledge is power and power is safety". As a simple hint, the sequence may also be simulated; though not always this is possible and/or the case.

Finally, the ways of satisfaction should be taken into account. Developers required to admit the importance of releasing tensions as continuous behaviors. It could be done by means of transferring [5] tensions to the environment and their colleagues or reversely, through accepting it (details about how accepting the tension can release the one's tension is out of the scope of this study and, for example, may refers to means of identification with parents [2, 9] or etc.) Another hint to recognize such sequences of behavior is that work habits by definition and, as they are being practiced, are rhythmic and periodic. Then developers should be curious about any cyclic behavior in the workplace.

It should be stressed again that, the suggested imitations can only be put into practice if undesirable effects of preserving bad habits have been carefully taken into consideration, respecting their potential non-constructive and non-optimal results. For instance, some traditional approaches of software development in which there is an attempt to imitate and, even literally, copy manual work flows, usually have a better chance of adoption in this sense (i.e. preserving old work habits). However, retaining non-standards and inefficient methods leads to a much higher risk. This is in addition to the fact that, many manual methods are inherently inappropriate for automation.

As an additional justification, following the proposed recommendations causes people to have a better chance for finding out and recognizing their (new/*modified*) roles in the new settings. This is a very crucial process for them to retain (re-obtain) their identification (in the sense of recognition; see [9]) with regard to the new system and its resulting balance of power within the organization [14, 15, 16]

A common experience for system analysts (including the first current author) is that they tend to ignore the (psychological) significance of the existing work habits by presenting the benefits of the new system. Even though the users are apparently convinced about these benefits, they are very likely still faced with the feeling of loss of their safe status (again [14, 15, 16]. The regressive nature of the defensive style of work habits (generally; and specifically, in terms of regression ego defense [2], p. 319), which have been discussed earlier, is in this connection.

Another issue is about workarounds. They are sometimes assumed to possess useful properties, specifically for the sake of system adoption [21]. And, of course, some other times, they are considered to be (very) negative, specifically whenever they cause to deviate from an optimal or critical prescription of work. For example, suppose that the implementation of a new method is vital for an organization to remain competitive; and still some people prefer to do a few workarounds, which undermine that expected cutting edge of competitiveness (even if those workarounds as such are effective).

Nonetheless, according to the very habitual nature of workarounds, it appears to be a good idea that developers build in some system features by which users are permitted to do some controlled workarounds (cf. [8]). In fact, certain types of such facilities have been known in the form of removing the existing automatic controls and procedures from the usual logic of the system's functionalities and, switching back into the manual actions which reminds old work habits; though this time through the system's facilities. For instance, notice to a hypothetical case in which users had manually been preparing invoices with a word processor. In the new system setting, the system automatically produces invoices; notwithstanding, users are also allowed to call the aforesaid word processor within the system or, using the system's particular editor, to do the same (manual) job. Although, this time, the produced information will finally be save in the system.

V. CONCLUSION

This study provides a ground to align the course of information systems development with users' work habits. The ground is generally the position that to analyze work habits it is possible to consider ego defenses as equivalence, especially those ones which are realized within workplaces. In this formulation, the core notion is *background mind processes* which outer manifestations may be shown by (work) habits, whereas the inner dynamism is better to be interpreted through referring to the notion of ego defenses.

To provide the means of alignment, initially it has been argued that work habits (*as ego defenses equivalent*) provide some ways of releasing (psychic) tension within organizational settings and in certain forms. Afterward, and based on this argument, some recommendations are provided in the previous section, mostly in terms of being aware of the old paces of work habits throughout the course of development, and with respect to its different stages namely stimulation, actions and satisfactions, separately.

The effectiveness of these recommendations can be investigated in future works. Nevertheless, it is expected that in larger and more layered organizations (with having more complicated organizational cultures; see [13]), the value of being aware of work habits are much higher. This would be at least because of the numerous levels of power and dimensions of relationships among people [4, 6], in that, even a minor change can ripply affect many current social conditions (see the [14]'s cases again). It means, in such settings, merely having a better information system may be not sufficient and, maintaining the social balance of the (large) organization is also necessary for a well functioning. Therefore, there will probably be no room to sacrifice the current social balance for the sake of a new change, e.g. a new information system.

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