

# The Information Technology Developer As An Actor In The Sociological Approach

Yustinus Suhardi Ruman, Kristianus Oktriono

**Abstract**— The article aims to punctuate the role of sociology in developing critical literacies study of information technology. In this set, it described the social aspects that affected the developers and users in information technology. The approaches in sociology study explained the inherently social aspect. The study ushered the readers based on the approach of functionalism sociological perspective. In this approach, developers and users of information technology served as social actors whose actions are influenced by social factors. Social factors structurally limit and enable a developer and user to create, develop, shape, or utilize information technology. The study involved IT designers or developers based on a literature study. The analysis accentuated the threshold of experiential, subjective meaning attachment in the study. As a result, the study offers valuable insight to predispose social actors in evolving behavioural and the utilization of information technology.

**Index Terms**— Critical literacies, sociology, social actor; technology; information.

## 1 INTRODUCTION

The development of technology has become one of the objects in sociological studies. Related to social change studies, sociologist remarked an identical conclusion. They acknowledged the role of technology as one of many factors that fostered social changes. The influence of technology for workers is a classic study in sociology. It served to analyze the effect of technology on social relations in the industry, particularly or society in general. Vago contended that the alteration from human to machine technology had transformed work in the industrial era [1]. Moreover, he emphasized that it resulted in the imposition of a steady pace or rhythm for work, bringing with it as increasing in the discipline imposed on workers. In this condition, employment becomes increasingly time-oriented, which in turn influenced other aspects. A further impact of such conditions resulted in tolerable relation among workers and workers' employment becomes distorted. In his work, Marx as quoted by Macionis, he asserted that the increase in using of advanced technology has also expanded dehumanization of workers in their jobs, obtained trivial satisfaction in their lives and perceived individually powerless to improve their situation [2]. It induced the workers in experiencing temporary alienation. Furthermore, Marx shed lights on four ways in which industrial capitalism alienates the workers, alienation from the act of working, alienation from the products of work, alienation from other workers, and alienation of humanity ultimately.

The description indicated that technological development always occurs in a social context and produces a particular outcome to the public. Referring to Marx's outlook, for instance, technology is developed in the spirit of capitalism. Capitalism, in this case, is a factor that encourages the development of technology. Technology, as an instrument, was used to contribute towards the accumulation of capital and profits. Despite technology information promotes indefinite advantages for human life; it leads to alteration in the pattern of social relations. Changing in social relations was characterized by personal relationships into impersonal relations. Face-to-face

interactions relationship-based becomes communication that took place virtually. This article aimed specifically to explain the social aspects of developing information technology and its impact on the pattern of relationships between individuals in society. By explaining the social aspects in the development of information technology, this article revealed the role of sociology approach in information technology studies. Sociology has an important role in explaining the social factors to encourage developing of information technology. It describes how information technology succeeded and failed in its development or application. Sociology studies explain the social context of a developer in developing information technology and describe the impact of information technology application in human relation. Thus, the study is initially intended to present the contribution of sociological studies to information technology studies. The sociology approach, in this case, will improve the ability of an information technology developer to understand the social meanings that can influence the behaviour as an information technology developer and the understanding of the users of information technology.

## 2 THEORETICAL BACKGROUND

Classical sociology recognized three main approaches in understanding social phenomena within society, namely structural-functionalism, symbolic interactionism, and conflict approach. Conflict approach divided society into two classes, i.e. group who obtain and obtain no access to the capital. The first group is powerful, and the second one is powerless. This approach rooted in Marx's view [3]. The first group reserves the power to control the development of information technologies, while another group has no control. They are developers who have no control over their work. Another sociological approach is renowned as symbolic interactionism that was firstly introduced by Weber [4]. Weber focused on the interpretative understanding of human social action. As an individual, according to Weber, an individual has a subjective meaning on his behaviour. Therefore, the social action of individuals is determined not only by external factors but also by subjective meaning. Based on the interpretive meaning of Weber, we interpreted that a developer of information technology depended not only on external factors but also on the principles of the own rational actions. Based on the approach, Thomas assured that individuals have the power to ignore all external stimuli since everyone holds the ability to define their situation and the consequences of their actions [5]. The other approach, functional approach, explained the social factors which influenced the success and failure of the

- Yustinus Suhardi Ruman is currently teaching undergraduate program in Character Building and Development Center in Bina Nusantara University, Indonesia, PH-06281314471246. E-mail: yuman@binus.edu
- Kristianus Oktriono is currently teaching undergraduate program in Faculty of Humanities in Bina Nusantara University, Indonesia, PH-06281280193888. E-mail: koktriono@binus.edu

development and application of information technology. The article was developed based on the theoretical principles of the functional approach. This approach is beneficial to describe the context through which the social event occurs. Functionalism [5] is defined as a society which is conceived as correlated parts in a system in which every part is the integral component of the entire system. An alteration of every part is envisaged as prompting a level of imparity, which this way yielded transformation in different parts of the framework and rearrangement of the framework in general. The development of functionalism posited on the obtained model of the organic system in biological science. Based on the lexical definition, the action represents a social meaning and therefore refers to social activities. The reason pinpoints that every action is interconnected in a system. Information technology caters an example of the consolidated product. It is not a stand-alone product, but it depends on the creator. Individuals who create these products originate and are in a particular social context such as culture, politics, economics, and related aspects. It signified that a product reflects a particular social context. The intellectual groundwork of functionalism approach can be traced to Durkheim's view of social facts [6]. In this respect, the social facts of Durkheim pointed to all facts that were determined by the way people think, act, perceive, and behave. Following this, the way someone undertakes things and how to respond to the external stimuli derive is determined in which social context one mature, develop, and existed. In this context, Bourdeau emphasized that social operators are endowed with habitus, engraved in their corpus by overdue involvement [7]. The experience in the past turned into an arrangement of plans of recognition, appreciation and knowledge that drives each social specialist to perform an activity.

### 3 ANALYSIS

#### 3.1 Information Technology Developer

An information technology development is expected to have two focal skills i.e. hard and soft skills. Hard skills are related to the ability to design information technology according to user needs or requests. Meanwhile, soft skill relates to two fundamental abilities, namely the ability to hearken and comprehend the expectations of others as the users of information technology. Doubtless, soft skills in this field contributed a prominent part because of humans' emblem the symbolic beings anthropologically. Every word represents a symbol of a particular purpose. Therefore, failure to understand the symbols used will have an impact on the creation of information technology. It urges human to meet the expectations even though an information technology developer attributes high skill in the field. Symbols are always produced in a particular social context. The common symbol indicated different things. In this case, an information technology designer must have the ability to understand the actual meaning behind the visible symbols. Secondly, the ability to explain the design to the users evoked a staggering spectrum in information technology. At one side, an information technology developer originated from a salient social-cultural context. Under these conditions, an information technology developer must have the ability to exert symbols and facilitate users. In this point of entry, the previous descriptions mentioned an indication that an information technology developer acted as a social actor. As a social actor, a myriad of social factors influenced one in the headway, such as where

one originated, where one is engaged, when one is engaged, and with whom one is engaged. Profound insight into these social factors can assist an information technology developer in developing information technology into more suitably tailored to the needs and can communicate the nature and manner of its use to the user appropriately.

#### 3.2 Information Technology (IT) Developer as Social Actor

IT developer serves as a social actor. As social actors, someone's actions are pertinent to social action. In the sociological view of Talcott Parson as quoted by Turner [8], social action of an actor is based on several elements, i.e. individuality, goal hunter, target achiever, confrontation with heterogeneous situational conditions, governed by values and norms, leaven and selected ideas, and production of decisions. In this vein, the foregoing explanation framed the action mechanism of an actor that consists of interrelated parts in a system, goals setting, and selecting ways or means to achieve a goal. Undoubtedly, it was influenced by external factors such as values and specific norms that are existed in society and the situational conditions. In addition, it contains values, norms and conditions that affect the behavior of an actor. Thus, an actor in functionalism perspective, in Parson's vision, one does not exist in space. In functionalism perspective, a developer of information technology is an actor who acts based on the social values, norms and specific situational conditions. On one side, it represents that the individual does not act on his/her autonomy. On the other hand, his or her actions to create information technology reflect the social values and norms or situational conditions that surround them. In interesting research, Jensen (1998), Harvey and Marc nab (2000), Hoffman and Novak (1998), and Sassen [9] explained about electronic space. It is going to be far more present in highly industrialized countries than in the less developed countries and indicated its presence for middle-class households in developed countries than for poor households in those same countries. In industrialized countries and developed countries, in this case, a special condition limits and determines the actions of an actor. In industrialized countries, information technology develops massively. While in developed countries, the creation and use of information technology are very less. In the context of functionalism approach, social aspects such as social values and norms or situational conditions could restrict and enable the actions of an actor. Social aspects that surround an actor may restrict them to create or design information technology. A developer may have the skills to create an information technology, but political, ideological, cultural, economic condition restricts someone to perform it. In Indonesia, considerable ethnic groups reject the using of information technology. Bedouin tribe in Banten, a province in Indonesia, is underdeveloped in terms of penetration of information technology (IT). The reason is not because of lack of access into it, but they refuse IT socially in their group. Generally, the penetration of information technology grows massively in many other communities in Indonesia. Institutions of education and training in information technology flourish in various cities. This indicated that social, political, economic, and cultural aspect as external factors enables a developer as a social actor to develop or produce information technology. Sharif had observed that technological developments should be interpreted according to the contextual situations of the community of its users and developers [10]. The success of

technological innovation must be analyzed in the same analytical framework as a failed innovation. Taking the cues, the success or failure of technology cannot be reduced to a functionalist account of its workings or its internal structures, but its achievements and problems must be explained in terms of social factors. Concerning the software engineering, Damaševičius conceived that a product of configuration process is not simply as a specialized assignment, but rather additionally a social procedure instilled inside hierarchical and social structures. These structures influence and govern the work behaviour of programmers and their final product, such as source code and documentation [11]. Programmers in this context do not exist in isolation.

## 4 DISCUSSION

### 4.1 CHANGES IN SOCIAL RELATION PATTERNS

Technology in general or information technology is one or even become one of the main factors that drive changes to social relations in society. Furthermore, sociologist William Ogburn (1922) as quoted by Mutake [12], he traced direct connections between such development as the inventors of the automobile self-starter and the emancipation of women. When it became easy for them to drive cars, they entered the business world and thus changed their role and the nature of their family relationships. Citing from various sources such as Mesch, Vankaes & Vitalari, McGrath [13] denoted that new media technology has had a positive and negative impact on the relationship between family members. Positively, they showed that it had changed the "meaning of family time". Information technology has made the time and place to work become more flexible, and therefore, the time to interact between family members becomes more intense. People can bring their work at home or can take their family members to a more open public space compared to working in a closed office. In addition to the positive impact, information technology can also induce every individual in the family to focus fully on their activities on information technology and trigger an ignorance to other family members. It will disrupt the interaction between family members. Every member of the family is thus alienated one from the others. The descriptions of changes in relationships reflected in several examples. Multifarious examples delineated that information technology has brought a change in the pattern of social relations. The examples depicted that it has made the pattern alteration of gender relations. The role of women traditionally resided in domestic space – but by information technology – they have been able to take part in the public sphere. Women are not only active in taking care of their households but also actively engage in various public issues.

### 4.2 IT AND NEW SPACE OF SOCIAL RELATION

Information Technology does not merely describe the social context of its developers and users but also produces a new space for human interaction. This space has the same characteristics as the previous space that restrict and enable people to act in a certain way. Following this, information technology in this context does not only reflect social values and norms or conditional circumstances of its developer but also became a space, which determines how people act. In today's modern world, information technology has become a new space for social relations. In the functionalist approach, space determines how people build relations among them. Therefore, information technology for modern society does not

merely serve as a tool, but further, than that, information technology itself has become a space that determines the relationship between the people. One authoritative voice in this theme, Sassen, confirmed that space for dialogue between humans has occurred in what is called by electronic space [9]. Sassen described that it reconstructs mainly cultures and hierarchies of power. Moreover, it also allows women to partake in contemporary contestation configuration and in a driven effort of distinctive setting, such as political to economic activity. For the voice, in the context of globalization, Sassen emphasized that these initiatives can go global and worldwide recognized. A major national economic actor offers a novel domain for initiatives by disadvantaged people. Damaševičius [11] proposed that specialized conditions among programming parts created "social conditions" or networks among software engineers who executed these segments. It demonstrates that the innovation developed by a designer framing new examples of social association, which is constrained and portrayed by created data innovation frameworks. Electrical space is not only creating new patterns of interaction or recent network at the micro-level between developers and users of information technology. More broadly, electrical space vertically in the field of politics has created a new pattern in the relationship between citizens and the state at the macro level. Mechanisms of citizen's participation in the political decision-making process. Supporting this, it was no longer centred on the representative body of citizens. Civil society actors can directly mobilize views or opinions of citizens to criticize any policy plans made by the government through electric space provided by information technology. It reflects that this pattern is contemporary, which is a very dissimilar pattern of conventional and traditional participation. It also prevailed in the field of economic activity. The producer or distributor of goods and services can directly interact with their consumers. Horizontally, the relationship among fellow citizens or community and group of today recently is opened. Not surprisingly, this allows the exchange of ideas, mutual understanding, culture and so forth. In short, electric space provided more flexible information technology and oriented culture for people or community. Consequently, communication exchanges that occur in an electrical space have enriched people in values of life. However, we should realize that the electrical space is provided by information technology and in many cases, it has distorted human values. Ethical issues in social interaction become very prolific to grow in the electrical environment. Other than raising ethical issues, the social interactions that occur in the electrical space prone to generate impersonal interactions. It could have an impact on an alienation situation. The situation can create adversity for an individual to develop his or her social potentials such as resolving differences of opinion in face-to-face interaction. It, then, weakening the ability to adopt when dealing with diversity in either race, ethnicity, religious or political beliefs. Under these conditions, the demand for regulation becomes very essential. The regulations do not curb human freedom of expression on one hand. It, moreover, protects the human dignity of human from unethical actions in the electrical space. In the public policy aspect, policies are also required related to the creation or arrangement of public physical space. The role sheds insights on every individual who physically interact with others. For the interaction that takes place in the public physical space, it exchanges not only words or ideas, but also the emotional expression that can be observed empirically.

## 5 CONCLUSIONS

A developer and the users of information technology in the sociological perspective is considered as the social actor. As a social actor, the actions of developing and using information technology are limited by social values and various conditional factors. The actions are thorough and even become an integrated part of the personality. Consequently, social aspects determine ways of thinking, feeling, and behaviour. At a closer look, it evinced that understanding the social aspects which affected developers and users of information technology in this context is very important. By understanding the social context, we can better analyze the conducive factors in developing an information technology that can be used by the community as useful tools. In this respect, researchers also analyze and explain the social perspective of how information technology fails in society. Given the importance of the social aspect, the sociological approach in the development of information technology education is required. By sociological approach, the students can realize social factors that influence their behaviour in developing and using information technology. The study contributes to setting the curriculum for an institution should envisage the core based on a sociological perspective. It aids IT, designer, as an actor to develop their competencies in evolving and applying the IT itself. Besides that, the next study recommends the stakeholders to analyze success and failure factors for users.

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