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INFORMATION INTEGRITY APPROACH TOWARDS TECHNOLOGY DEVELOPMENT SYSTEM

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Abstract: Nowadays Information is a key factor in every field of Science and Technology. Some times in information system available information affects the result and performance of the system due to incorrect source of information. Environment uncertainty and 5 C's affects on it. It creates errors in the system there form system doesn't gives accurate results. In Information system the available or required information should be correct, accurate and reliable for the best system performance. Hence the Information Integrity Information is important which improves the correctness, accuracy and trustworthiness of information in information system. This paper introduces the concept of information integrity and need of technology development in the system.

Keywords: Information Integrity (I*I), Information System (IS), correctness, accuracy, trustworthiness.

I. INTRODUCTION

The concept of information has become a crucial topic in several emerging scientific disciplines, as well as in systems, in business organizations, in industries and in everyday life. It is legitimate to speak of the so-called information society; but a scientific understanding of the Information age has not time to develop. For this user require correct decision in flexible information situations. Thus to improve information evolution there is a need of a new trans-disciplinary understanding of information, encompassing many academic disciplines and new fields of interest. Therefore science of information integrity is required in Information System (IS)[1].

Over the last fifteen years, an international online discussion group called Foundations of Information Science has made efforts to bring information theorists together around the concept of information as a theoretical subject. The work of scientists such as Hans Christian von Baeyer and Wolfgang Hofkirchner [1][2] forms the basis for a new unifying perspective of information, which builds a necessary foundation for a new trans-disciplinary science of Information. Data Information is developing its own theoretical basis as well as scientific, societal, personal, commercial and system applications [3]. Following these developments, the need for establishing a new international and Trans-disciplinary development and coordination organization, the new Science of Information Integrity (I*I) takes into consideration a larger perspective encompassing many academic disciplines, system process and new fields of interest in Information System [4].

II. ENVIRONMENT UNCERTAINTY

Information System environment creates information envelope and system representations indicate uncertainties present at each base in Business Environment [5]. There is a lot of Uncertainties in setting long term goals. These uncertainties, which lead to informational errors, are briefly listed here.

- Uncertainties in Operable goal
- Uncertainties in identifying Problem Solving
- Uncertainties in developing Problem Structure
- Uncertainties with respect to time

All the above uncertainty reasons in information system process create information errors [6]. Thus to resolve all these errors and issues in business information management system there is need to design information integrity technology development system[7][8].

III. ENVIRONMENT FACTORS IN IS

The Information System views of the information process that is subjected to errors in data and information processed by it [9]. These errors in IS are caused due to system environmental factors external to the IS application and

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overlapping the user environment. These system environmental factors are:

Complexity

Complexity factor signifies existence of interdependent variables in a system. A modern, real world business enterprise is concerned with issues size, speed, variability and measurability of the system, and has to work with a large interconnected, interrelated and interdependent variables; rendering the system complex in nature. Every new component, hard or soft in nature, adds new interface in the system of IS enterprise and therefore new variables in the system and increases complexity.

Change

Change factor pertains to the difference in the state of a system between two points of time. The knowledge about change helps understanding system dynamics. All real system enterprises show dynamic behavior. As time passes, the state variables by which one measures their condition, fluctuate noticeably, sometime alarmingly as when cash reserves fall, and sometimes, gratifyingly such as when profits rise. These fluctuations are because of input variations which fall on them from outside the system, or are contributed by pressures generated from within the environment. Inhibiting the undesirable fluctuations, promoting the beneficial ones, are objectives for the decision makers concerned [10]. This decision making requirement makes it necessary to know dynamics inherent in the system enterprise, which in turn requires understanding of developmental tendencies in the business.

Communication

The global distributed structures for competitive advantage and access to bigger in and are formulating information systems as networked, information systems. This brings in the Communication factor where 'communication' stands for movement of data/information within or across enterprise and it also provides a chance for error introduction in IS leading to inaccurate, inconsistent and unreliable processing of information.

Conversion

Conversion factor refers to the consolidation, decomposition or transformation of data. At the time of conversion of data from one form to another, there exists a possibility of error introduction resulting in uncertainty and in information which may not be accurate and reliable.

Corruption

Corruption factor relates to human behavior (poor motivation, desire for personal gain, carelessness, and actions of people) and to unpredictability (noise) of any kind leading to uncertainty in system environment resulting in errors in the IS process leading to data and information processed being inaccurate, inconsistent, incomplete and unreliable.

IV. IMPORTANCE OF INFORMATION INTEGRITY

Mandke and Nayar [11] argue that errors in IS view includes:

- errors with deterministic descriptions caused due to events singular in nature like Software failure, denoted by ηsing, and
- errors with stochastic descriptions caused due to:
- General causes like mechanistic failure, service disruptions, denoted by ηg,
- Human judgmental factors operating at human IS interface, denoted by ηj, and
- Systems factors (external and internal to IS) like a merger, regulatory activity,

Thus applicable combinations of error types occur at various data processing activities under IS stages. For the purpose of the research investigation is to recognize that errors in IS view of the information process result in loss of integrity at the data origin, conversion and output stages [11]. At pre and post conversion stage in the information process information system model, thereby rendering data and information processed inaccurate, incomplete, not up to date and unreliable. Based on such low integrity information that the IS view has a requirement for the decision maker to make information decisions on, product demand information; components, subsystems and systems definitions information; and on process definition information, i.e., which are optimum for control implementation for optimal processing of physical variables of process so as to achieve system objectives.

The additional constraints in the decision making process is:

- Automation of informational work system reduces the time; thereby increasing in total business activity cycle time the proportion of time in which product is actually produced and delivered and reducing the proportional time in which information decisions are arrived at and that, too, based on uncertain information.
- The automation of physical work system, possible as product inputs are transformed into product, is till information decisions are fed in for control implementation.

If the first constraint adds to the implications of error components at data origin, conversion and output stages and at pre and post conversion stage communication channels by further increasing the risk of information decisions being incorrect, inconsistent and unreliable, the second constraint

makes the procedures of the physical work system carry the possibility of incorrect and non-optimal implementation, as structured physical work system has to operate under uncertain or incorrect information decisions; thereby rendering the product delivered sub-optimal or not to the customer requirements or incorrect.

When physical work was not automated, in the wake of data-driven technologies and the Net, second constraint carries a strong probability of resulting in business situations, more as rule rather than exception, wherein there is sub-optimal or incorrect product manufacture and delivery, and there is no alternative available at affordable price and in reasonable time. And in a business with strategic objectives of mass customization, agility and IT driven market differentiation which call for product carrying value added features based on customer specific information, this certainly means loss of competitive advantage in business strategy.

This clearly brings out the central thesis emerging from the critical analysis so far of the workings of the informational and physical work systems under the business enterprise process characterized by uncertainty, with feasibility of data-driven technologies keyed to the flow of digital data throughout an enterprise and faced with the strategic requirements of business objectives of effectiveness for competitive advantage, correct information decision from informational work system is fundamental to physical work system delivering the correct product as per the customer specifications [12].

The system process IS view characterized by errors due to uncertain business environment must ensure adaptively in the form of feedback mechanism

- to learn about errors made in processing information or information decision and
- to correct them, so as to deliver correct information decision, i.e., information with integrity
- so critical for competitive advantage.

This information integrity imperative that enunciates the dependability or trustworthiness of information, i.e. 'Information Integrity', as the key factor determining strategic advantage in system environment characterized by uncertainty.

V. CONCLUSION

This technology development use in information management system, which minimizes overruns of cost, time and error, i.e. loss of information integrity. This research work on information integrity technology development using system dynamics is the frame work of information integrity to improve the usefulness, usability and effectiveness of environment topology while developing Information Systems.

This research study aims at advanced level interdisciplinary and analytical introduction to integrity of information system and information there from as a technology for system spirited benefit in a complex and shifting environment.

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