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CHANGING THE FACE OF EDUCATION SYSTEM FOR ORGANIC IT*

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Abstract:

Education is the essence of life. Every individual has right for getting education. But it must not be limited for the sake of degree or employment. Instead it must be imparted and gained for the benefit of oneself and society. In this paper we have suggested a new approach for education system. Also the technology required to implement such a system is discussed here.

1. Introduction:

There are fundamental visions which drive our educational endeavors. The visions may differ on how technology is used in an education system. One can argue that education is an enterprise to preserve established order and to inculcate rituals and rules of the society sponsoring it. Technology has reached a stage of development that cries out for new directions in our entire educational enterprise.

One of the major innovations that Forrester believes will launch a revolution in IT efficiency and business agility is what they call Organic IT [5]. The first architecture of Organic IT that came in the year 2002 has been defined by Forrester as: Computing infrastructure built on cheap, redundant components that automatically shares and manages enterprise computing resources-software, storage, networks and processors-across all applications in a datacenter.

According to the second architecture proposed by Forrester, tomorrow's management will mimic the design of human nervous system [9].

But we have redefined the concept of Organic IT. Organic IT must be self-organizing, self-configuration, adaptive, self-distributing, self-healing, automatic

parallelism, self-protective and protection of others, and accountability [15]. It should be decentralized in nature having technologies other than silicon. Our new proposed framework for Organic IT will manage Organic Network, Organic Storage, Organic Software and Organic Processors has the same features as that of Organic IT.

In the second section the background of this study is discussed. In the third section we have suggested a new approach for the education system and also the framework for Organic IT is specified. In the forth section we have discussed the outcome of the new approach. Final section is the conclusion.

2. Background:

Accountability and improvement may need to be brought into closer alignment if positive and lasting change in higher education is to be achieved [10].

The prophetic and priestly visions in education directly suggest very different views of how technology should be used in the schools. The vision also has a distinct understanding of the curriculum [13].

The accelerating changes that are taking place in information access, in particular with the possibility of global interconnectivity; promise new opportunities for business and education. For implementing scalable, robust and self-managing systems, technology and people, both have to undergo drastic changes. Here we suggest and support the development of new technology called Organic IT.

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The technology inventions in 2005 is inclining towards Organic IT and nearly 2,000 patents have been published since the beginning of 2002 in core Organic IT areas, such as server virtualization, and clustering technologies like RDMA over Ethernet. Storage invention is more focused on network – attached storage (NAS). IBM drives in server technology while Brocade leads in storage technology (2002-2004) [7].

Outsourcers can dramatically improve their client relationships by adopting an Organic IT infrastructure to enable better services, flexible contracts, and measurable cost savings [11].

Over the last decade, it has been fashionable to deride what used to be called “Islands of automation”, disconnected group of systems with no obvious integration points other than the end user. Unfortunately, the rhetoric against “islands of automation” has probably colored our collective thought process more than it should have and has driven both the vendor community and users to now want to look for overarching technology visions to implement the new vision of Organic IT [4]. Despite decades of development, today’s Internet still fails to solve one of the most nagging problems in networking – optimizing the routing of packets from company to company. In everyday operation, Net suffers from [12]:

- Inefficient routing
- Wasted bandwidth
- Unhappy Customers

3. New Approach:

There is a need for changing the education system prevalent in India and other countries. This changed education system must be supported by Organic IT technology. This change will have to be accompanied by cultural and personnel changes. Basically we suggest a decentralized education system supported by Organic IT technology. Decentralization helps in transparency and co-operative work environment

keeping personal issues aside where as centralization makes an organization and the work force hierarchical. Decentralization allows equal participation of lower as well as higher level employees and managers; but centralization does not effectively include lower level participation. There are three kinds of decentralization [2]:

1. Deconcentration- This implies transfer of tasks and work but not authority.
2. Delegation- Delegation means transfer of decision-making authority from higher to lower levels, but authority can be withdrawn by the center.
3. Devolution- Transfer of authority to an autonomous unit which can act independently without permissions from the center comes under devolution.

Decentralization is also required in both political and economic front apart from educational decentralization. There are fundamental visions which drive our educational endeavors that can stymie or send awry the implementation of any and all computer-based technology unless they are clearly understood. To graduate without a strong knowledge base and the ability to continually “self-teach” is of no advantage to the student. The goal of class must be made learning and passing.

3.1 Framework of Organic IT Infrastructure:

IT infrastructures are designed without keeping organization and business in mind. It is not considered at the time of planning or implementing new strategies, structures and goals for business and organization [16]. The IT infrastructure should be cost-effective, improve business efficiency, generate profit for the organization and provide customer satisfaction. Standard adherence must be an integral factor while designing and implementing IT infrastructure to attain uniformity and efficiency.

For developing framework for Organic IT Infrastructure framework, open system standard must

be followed. For developing the framework flexible guidelines are being mentioned. The effects of guidelines can be either favorable or restrictive. Guidelines that are too rigid and strict can have counterproductive effect [1]. Thus an optimum level has to be maintained for satisfactory results. The guidelines are as follows:

- development of IT infrastructure capable of supporting current and future business strategies and technologies;
- establishment of effective business-IT relationships.

Here we propose a framework for Organic IT infrastructure (figure 1) where management, business strategy, business infrastructure, IT strategy and IT infrastructure are the inputs for an Organic IT infrastructure design. Moreover in addition to these factors human figure, work practices and information along with its processing are equally weighted factors for a successful infrastructure design. These factors can be placed under management variable. For an organization to have such an infrastructure, changes will be required in its policy, governance, attitude and mindset. Hence, these are the affected variables. Such an infrastructure will result in uninterrupted IT service, flexible business and profit.

Organic IT Infrastructure Framework

Figure 1: Framework for Organic IT Infrastructure

The management should be in synchronization with the IT infrastructure and there is a need for standardization of information systems on a common platform. This will eliminate unnecessary need of integrating applications, systems, processes and even people. But, the standards must be adaptive and not rigid which might restrict further development and innovation. The management practice should be in compliance with the IT infrastructure and organizational structure. Organic IT infrastructure framework as shown in figure 1, will not have architecture and governance as the sub components of IT infrastructure and IT as well as business strategy respectively.

3.2 Changes in Education System:

We suggest devolution of an education system where the transfer of authority is given to an autonomous unit. This unit can act independently without permission from the center or any other functional body for the benefit of the student and society as a whole. As educators, an educational institution owe it to their student to do more than simply lecture on material and hope they get it. As businessmen, one must look to student retention as a way of increasing student credit hour production and therefore profits. A shift from heavy reliance on lecture-based interaction to a rich learning environment characterized by active, cooperative learning, supported by technology. Organic IT technology will create a demand for graduates who can work in teams as well as individually, communicate electronically and even organically if needed, solve open-ended problems, think critically and are ethical in approach. This would also involve expanding the faculty's instructional methods repertoire. There is a need to improve instruction by offering well-structured active learning for individual students and teams, to extend group as well as individual learning beyond classroom hours and to increase student's ability to access and critically analyze the human and information resources available on the Internet [3]. The notion of transferring information from one culture to another is fraught with problems, based on the assumption that a common understanding and value system exists [14]. Instead of following traditional scheme of learning, there must be freedom of learning. Both knowledge transfer and learning must be bidirectional ie, both the student and

teacher must gain from each other. There needs to be a methodology designed to cause the student to want to change their existing understanding. One has to develop a decentralized mindset and a decentralized educational system for Organic IT technology. Equal weightage should be given in developing various skills for various tasks. Though different societies have different patterns of communication, uniformity has to be maintained in imparting education. Emphasis should be laid on the moral and cultural dimensions of education, enabling each person to respect the individuality of other people. But this process must begin with self-understanding through an inner voyage whose milestones are knowledge, meditation and the practice of self-criticism [8]. The use of technology in education and technology or technical education, both have to be improved and upgraded to reach the requirements and standards of Organic IT technology. By having good “Intelligent Tutoring System”, “advanced technology” and “teachers” are not enough to produce good quality of students. But constant mentoring and motivation must be the essential missing elements in the education system.

Figure 2: Changing phase of Education system

By the above figure we infer that the first step taken to change the education system must be self-understanding which is achievable through knowledge, meditation and self-criticism. The next step is the up gradation of education and education system for the

mutual benefit of the educational enterprise and the society. Finally, step must be taken in elevating technology towards Organic IT.

4. Outcome:

The Organic IT technology will change the world of word. The pressures on all organizations, including universities to down-size, to improve utilization of resources, to delay and provide healthy technocratic work environment will significantly affect all aspects of our lives, whether we are lecturers, support staff or students. The major burden will be in the education system from the basic building of the child to an educated individual. Such an education system will be:

- Flexible- will be able to undergo any change for improvement.
- Reliable- in terms of quality, service and cost.
- Scalable- can scale according to the requirement.
- Secure- will be secure and robust for every individual.

5. Conclusion:

Here we have suggested a new approach for education system and the technology required to attain the same. New understandings in educational change, communication technologies and instructional design will require us all to maintain an open, experimental and flexible approach to defining our process. Well-coordinated decentralized approach has to be achieved to make this vision true.

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