Social Re-Engineering: A Changing Perspective

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Abstract

Social engineering has become one of the biggest security concerns for organizations. Apart from information security, technical related short comings to break into organizations' confidential data is also observed. Employees and individuals also deceive organizations' confidentiality. The social engineering challenge suggests that awareness of social re-engineering is appositive approach of security protection practice. Thus, to reduce the probability of potential consequences our study suggests that organizations must study the process of social re-engineering in the society, explore the process of re-engineering in business processes and information technology and then suggests ethical approaches to social re-engineering. The main objective of this paper is to bring awareness and reduce the effect of social engineering and reap the expected benefits by introducing social re-engineering.
A literature review has been performed to identify the various challenges and has linked these challenges with solutions. Relying on a single approach may not yield any satisfactory results. The validation of the model is possible only with the help of meticulously planned theories and practices. Social re-engineering strategies depends upon the type of business, what business aspires to be and the value preposition. The intended outcomes of social re-engineering are first identifying the critical enabler and overcoming the barriers of social re-engineering. Innovation along with personal and institutional integrity is the best intended outcome of social re-engineering. Organizational learning transforms the information into knowledge and improves the innovation and competitive capacity. Every organization's motive should be to minimize the impact of social engineering and unfold the benefits. To bring perfection in the competencies of the employees, the organization is required to adapt social re-engineering.
This paper fulfils an identified need to study how social re-engineering can be beneficial in cultivating a culture of continuous learning and improving core competencies in different sectors.

Keywords – Social re-engineering, educational process re-engineering, ethical approach, continuous improvement, integrated planning

Social Re-Engineering : An Overview

Social reengineering is a kind of solution facilitated by the technology which necessary for making the ICT induced effective governance for the human capital. Social reengineering is a lifelong process. With the use of ICT (Information and Communication Technologies), the focus of the government is to bring about civil culture in a mutually associated manner ; however, factors like digital literacy, absence of strategic plans of ICT incorporations and absence of clear government rules has posed a challenging transparency bottleneck within gourmet of the ICT infrastructure.

The most common forms of social engineering practices in our world today includes, phone scams, computer hacking, cyber theft, identity theft and personal information often get compromised. The victim willingly gives out internal information advertently or inadvertently. If we talk about Re –engineering in refined manner then it is a kind of restructuring the business process pyramid and the other associated designs for the enhanced productivity and overall improvement of the business enterprise. However, downsizing, restructuring, reorganizing and new technology innovation is not considered business re-engineering.

As described by management thinkers, from, Fredrick Taylor to Peter Drucker, in defining a process it is nothing more than coding something which one has learnt in the past. The scientific management is more related to creativity.

Optimisation is nothing but assuming that the company's productivity will increase in due course time. Productivity is nothing but the combination of effectiveness and efficiency. It is related to the management concept. Social engineering is more a psychological aspect where with the help of malicious activities there is an attack on the personal information of the people which is as a result of social interaction.

However, the biggest Lacuna associated with it is the security aspect. Very few people are safety conscious while major of them they are not. Overuse and overexposure of personal information have rendered the social engineering process vulnerable (OpenKnowledge, 2013).

It is seen that the firms are unable to cope with current days of advanced knowledge, technology, uncertainty and the persistent changes. Based on the real facts it is found that the IT firms most of them are still propended towards making their business process automatic with reference to the cost cutting. It is also observed that some firms that they are not very enthusiastic in providing the required tech support to the employees. To be precise it is only 5% of the staff who is provided with the required assistance. (TechCrunch 2011)

There is often a performance gap in knowledge intensive sectors because social engineering has taken place but has not been implemented properly. Why does collaborative work fail?

However, informative systems and management thinking has taken a backseat in terms of repeatable processes

Method
Our research method is a structured literature review. The study endeavors to develop analytical viewpoints, critical takeaways, future study suggestions and answer few research queries. In research Literature review plays an important role in various ways.

The researchers have read and analyzed different articles and classified them based on their definitions of education process re-engineering, business process re-engineering and social re-engineering. The researchers synthesize this analysis to gain a perspective on the different organizational theories set up. Then the researchers use constructs from social re-engineering theory to make policy recommendations

Research Objectives
1. To study the process of social re-engineering in the society.
2. To explore the process of re-engineering in business processes and information technology.
3. To suggest an ethical approach to social re-engineering.

Every city and metropolis are structured based on six pillars, (i) economic condition, (ii) residents (iii) local governance, (iv) frequency of movement, (v) eco-system and (vi) lifestyle. Governance, in turn, is inclusive and transparent, offers strong social services and generates strategies. In the process of social engineering, ICT is the most essential strategy. Data mining and data analytics is an essential step in the extraction of knowledge, starting from data capturing. This data can predict behavior, tendencies, regularities and use online information for decision making. But what happens to data security?

What happens to cybercrimes and espionage? The answer to all these challenges could be addressed through social re-engineering. Social reengineering is the modification of a system or entity to reconstitute it in a new form and the subsequent maintenance and implementation of the new form. Social engineering is defined as perceived or actual influence from either an inside or outside source to change existing behavior. Social re-engineering on the other hand is maintenance of that actual influence. Re-engineering in business process is known as Business Process Reengineering (BPR) and re-engineering in education process is known as Education Process Re-engineering (McGhee, 2002).

BPR is defined as a process of analyzing, designing , re- designing, the workflows and systems for enhanced performances (Davenport & Short, 1990). BPR is designed to accomplish the changes in business key performing indicators (KPI)such as quality, cost, time, standards with stress on reengineering with performance improvement (Hammer &Champy, 1993).

Analysis & Discussion:
Research Objective 1. To study the process of social re-engineering in the society
Humans create systems that function according to certain inputs that have been fed into them. For example, the way a particular society functions in an area is because of the way its social fabric has been woven. Humans get accustomed to the systems that they create and undoubtedly, allowing any kind of paradigmatic change feels oddly unsatisfying at the outset.

To bring change, a process of rewiring needs to be set in motion. This usually works like a process with a starting point that may or may not be easily defined. Such as in the case of a social movement, we cannot exactly pin one single event as the turning point but can credit a series of events as contributors to bring a certain difference.

One might question the need for change, and why we romanticize it on the one hand and resist it, on the other. Change means hope for some, but it also means letting go of what exists in its present form. This is probably where the resistance stems from. People become comfortable with the current settings they work in, study in, reside in and so forth. However, with changing times, it is important to advance. If we were to think for a second, what would happen if people stuck to the idea of researching through piling on books over books as material and not accepting the innovation of the world wide web – the image is quite daunting.

Speaking socially, the systems that surround us today are the result of thousands of years of evolutionary journeys that continue to shape our existence. Family, educational institutions, professional workspaces, marriage – all these verticals are part of the society that we live in today. And to stay relevant with the changing times, our systems need to change too. When we say that the system is changing, what we really mean is that people are the ones initiating it. When it becomes a largely accepted development, it is said that society is changing. Here, we look at a concept that can be credited for enhancing and advancing systems. The concept of Social engineering or rather, '*Re-engineering'.*

Social engineering per say is often remembered in a negative light as a way of manipulating and manoeuvring thoughts for select purposes. On the brighter side, Merriam Webster describes Social engineering as, "management of human beings in accordance with their place and function in society". Social re-engineering is an effort to influence certain attitudes and social behavioural characteristics on a large scale. Most often, such experiments are undertaken by governments but are also carried out by media, academia, and private institutions. While the objective is common – to change a certain existing order, the medium of bringing this change can vary. Bringing an example to light. One could ponder, how is it that a popular politician having been born in a political dynasty loses a seat in a constituency that his/her party was least expected to lose. The answer is social re-engineering. What stays relevant and what does not – is decided by social re-engineering. Philosophically, social re-engineering is a deterministic phenomenon that enables the architects of the new social construct to realise their intentions and goals.

Research Objective 2. to explore the process of re-engineering in business processes and information technology
In the context of education, the term Educational Process Reengineering (EPR) is used for performance improvement of teaching learning activities, educational evaluation, assessment, and academic administration. This includes standard operating procedures for academic and educational administration. On these lines, social reengineering is a positive perspective to risk management with emphasis on its relevant work in society (Hossain *etal*., 2011).

In common parlance today, the keyword is e-Learning, but if one were to ask their ancestors, they would probably think that it meant learning the alphabet specifically. How is it that today the world is going towards digitising its education, students are happily learning on their tabs as opposed to the traditional blackboards, and parent-teacher meetings are outdated? The answer is nothing but *Social Re-engineering*.

As humans, we do not like the idea of change initially. But that is the thing about social change – it happens slowly and gradually and then all at once; such that instead of a major shift, it feels like a process that the society or the system is drawn into. The world of work(wo)men similarly, has seen a million shades of changes. From feudal lords to masters to industrial factory owners to a world today where entrepreneurship thrives is the outcome of social re-engineering at play. Also known as Business Process Re-engineering, it has radically redesigned core business values and have forced service providers today to put on their thinking caps and bring more value to customers.

In research from Ratheeswari (2018) information and Communication Technologies ('ICT') are used in the field of education to give way to e-Learning. Questions such as how the ICT can be used to achieve this target are often asked. A comparison can be made between the world of Business and how they have used Business Process Engineering to enhance the way business entities perform with e-Learning and ICT that has not replicated this success yet. *'Theory of diffusion of innovations'* has a lot to contribute here. It holds answers to as to when and how e-Learning can be propelled.

"Educational processes re-engineering" ('EPR') is a term that is coined, and which is relevant towards improving the current situation by dealing with them like a process; more emphasis should be laid on formal education, although informal education is seems to be the dominating force with more durable effects. Further, EPR is likely to contribute towards the enhancement of e-Learning by suggesting the best ways to apply ICT's for improving the teaching-learning process.

Take the case of Aadhar Unique Identification number in India, the flow is based on the Unstructured Supplementary Services Data (USSD) This is a service that tells us about the linkage of the Aadhar card with the bank account. It is only with the Aadhar number that one can trace the name of the linked bank account. The digital hackers can always take advantage of this small information for their other nefarious motives. Thus, the privacy of the account holder is always at a risk. One of the main purposes of the introduction of the social re-engineering was to take care of the said privacy issues.

A new concept of Virtual ID was introduced by the UIDAI whereby the individuals can generate Aadhar and make use of the same for diversified purposes rather than sharing 12-digit card. (Gupta 18)

Briggs & Redwood (2013) quoted in their article that, Barclaycard, U.S. decided to come up with new credit card in 2011.This concept was related to the sourced credit card. This move was out of the old method of issuing the card. The company decided to check the effectiveness of the card through a private online community. This community enabled the company to get information related to the customers need and preferences. The company was able to break the shackles of the traditional method of contact between the corporate and customers. The product so created was a kind a joint creation with the valued customers. Thus, there was a launch of the credit card of the company. The company was able to obtain its objectives through business process re-engineering.

Research Objective 3: To suggest an ethical approach to social re-engineering.

Corporate espionage is on the rise in India, as the level of competition is intensifying in the industry by the day. Corporate espionage has a different legal name now, known as "Business Intelligence". Without even companies knowing that vital information on employers, partners, suppliers, and business strategies are often shared. Due to social engineering data and information are easily available. In most cases, espionage takes place through employee-related frauds. Fraud cases like passing on information to competitors, masterminding theft and pilferage, and misappropriation of funds and office resources are the result of easy data availability. We come across complaints against insurance companies, where insurers get spurious calls throughout the day, and they are also asked to perform the transaction during the call. This exposes the security of the system and the information, while the caller may not be from the insurance company, it leaves a question, how did they have all the details of the insurer? At some point the customer information had leaked and there is no way to protect that data/information leakage (McGhee, 2002).

There are various and numerous sources through which information can leak, one of the major sources or challenge in social engineering is the internal employee of an organization. Employees handling information can be classified into three groups.

1. Individual contributing to the advantage of their own organization. They are perceived positively, and the overall objective of these individuals is to preserve the wellbeing of their employer.
2. Individuals contributing to the advantage of a competitor. They are negative individual, either outsiders or insiders, with an objective to access other entities with the intend to defraud or gain a competitive advantage for the organization or for themselves.
3. Individuals vulnerable to impersonation or manipulation resulting from social engineering. Individuals are forced into making a choice between a perceived ethical or immoral approach to achieve a result.

What many organizations consider to be a Social Engineering risk can be explained using the Coca Cola versus Pepsi example. An employee working for Coca Cola can apply for a job in Pepsi, it could be to gain access to the secret formula of Coca Cola, or the technology used, or it could just be a genuine employee. How would one differentiate? This employee may gain trust and respect with the passing of probation. The challenge for any organization is not only to maintain the loyalty displayed by the employee but also to continue the development process of the employee.

While salary and training are common methods of employee hardening, e-sops in start-ups are also methods to ensure employee loyalty. With thorough training, employees would no longer have the option of denying responsibility for their actions due to lack of knowledge. Learning what and how data must be secured is the first step to Social Re-engineering. Common sense cannot be relied upon for securing information in the workplace. Access to hardcopy and electronic data must be controlled and allocated to only certain individuals on a "need to know" basis. Common methods for controlling access to restricted information include identification badges, combination locks, keys, sealed packages, passwords, new technology development in voice, eye, and facial recognition.

Changing Role of Social Re-engineering

Social re-engineering is needed in all aspects of our society, in business, in education, in governance, in our eco-system and in our lives. This paper examines the value of information handling and stakeholder hardening with ethics, training, and motivations of people in the organization. Social re-engineering is very much essential to preserve the security and integrity of any operations. Maintaining successful, security conscious employees is a full-time, a long-term challenge requiring consistent social re-engineering and ethical practices. Social re-engineering is not simply adding a social component into an existing business or educational process but fundamentally changing the way work gets done, solutions are reached, and innovation is stirred. Social re-engineering is addressed to an open forum of ideas and problem solving that draws out the best from all stakeholders spanning all functions of the enterprise. Social re-engineering is yet another form of reshaping knowledge management.

A closer look at society: Our society today is more open, liberal, and diverse as compared to what it was earlier. With the use of ICT, information could be exchanged at a faster rate. It was only when ideas were exchanged and existing

mindsets were shaken that people began to accept the newer and sometimes, kinder ways of living. For instance, today, a woman who stays unmarried beyond a certain age is not going to be the bearer of extreme taunts and mockery by her family members as was the case at one point. This is because the society we reside in has changed its rules, crediting to social re-engineering.

A closer look at business processes: With more and more Gen-zenians entering the workspace, the way businesses run is changing and how, this is a classic example of bottom-hup social re-engineering. Organizations are learning to be more diversified and flexible today as opposed to what the scene was 10 or perhaps 20 years ago.

Good pay is not the only factor to attract the best talent in this day and age but ensuring that the work is interesting and that the workspace environs a good and healthy atmosphere is what makes the employee stick.

Closer look at education: The biggest example of this is the "**Pashtepada model**" in India – this is the story of how one man, with one simple idea and a catalyzing vision, changed the way learning takes place. By introducing his young students to informative and enjoyable videos and pictures on his laptop, he invoked a sense of curiosity in them that not only made education seem more interesting to them but also made them more interested in learning and attending school regularly – two elements that were missing earlier. Moreover, the dropout rate has gone down, families that were hesitant to spend on their children's education are doing so, and the learning outcomes have improved significantly. By pooling in resources, today every student in Sandip Gund's class has a tablet for learning (InsideIIM - Konversations, 2019).

The Pashtepada model, organizational successes, enrichment in the way our society functions today – these are all examples of how social re-engineering has achieved its goals truly making way for further better things and times to come. This momentum must continue and not stop. Adaptation of a better system with the help of ICT should be encouraged as the results are crystal in front of us (Pareek, 2016a).

Social re-engineering can be likened to a social revolution. It is the overhauling of the current social norms which rule and dictate behaviour in a society. Social re-engineering seeks to reconstruct social patterns prevalent in a society with the intent of producing an intended or desired change. Efforts can be made to include the youths by giving them a stake in the decision- making process. When people naturally feel responsible for projects, they play a part in creating, that is another key to social re-engineering. To make social re-engineering business process, more efficient and operational, the following strategies can be used.

1. **Choose your target**:

For the purpose of social re-engineering, the companies have to think out of the box , of possible ways by which they can make the best use of information and of people through social media for their trade purposes by connecting its various team members. The results of the all the departments and areas can have exponential outcomes with re-engineering and social mind frame.

2. **Social Discovery**:

With the advent of technology every individual and organisations take the bliss of it and make it for their business purpose. Getting socially connected make the process of networking more robust and stronger. Like minded network with each other and for their mutual advantages. Considering external parties and collaborators in the business processes help the organization fulfil target objectives.

Before applying social strategies to business, one must think what may be hampering the performance? Is it the knowhow, commercial system, information gaps, fear of collaboration, biasness, fulfilment of legal requirements so on and so forth?

Is it technology, corporate structure, communication gaps, unwillingness, or inability to collaborate or bias against external parties or legal and regulatory requirements? Social strategies can be designed from the constraints identified.
To bring perfection in the competencies of the employees, the organizations are required to work towards continuous learning and improving their core-competencies. The guiding principles and intended social re-engineering directions is a step forward in that path. Social re-engineering strategies depends upon the type of business, what business aspires to be and the value preposition. The intended outcome of social re-engineering is first identifying the critical enabler and overcoming the barriers of social re-engineering. Innovation along personal and institutional integrity is the best intended outcome of social re-engineering.

So how do we go about it and get optimum result? Keeping in mind, the most desired outcome mentioned above, the researchers suggest integrated planning for organizational learning, employee retention and continuous improvement on core values, key competencies, and work ethics. With help of Organizational learning (OL) individual knowledge can easily be converted for the benefit of the organisation (Basten&Haamann 2018).
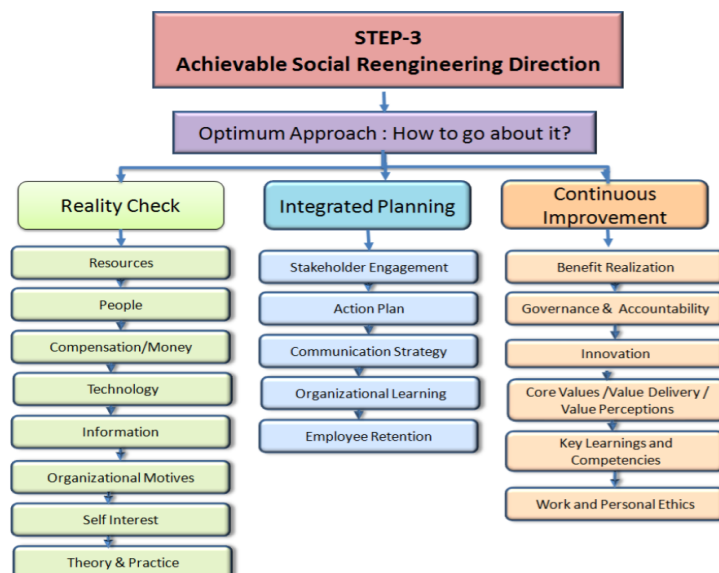
Suggested Model for Implementing Social Reengineering (Figure-1)
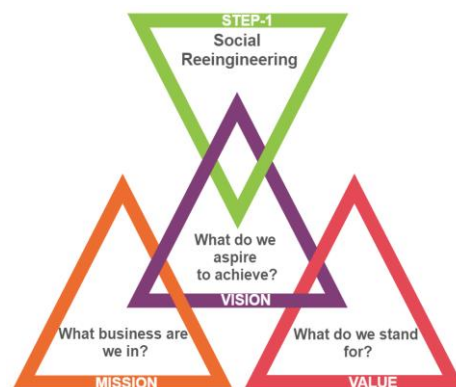
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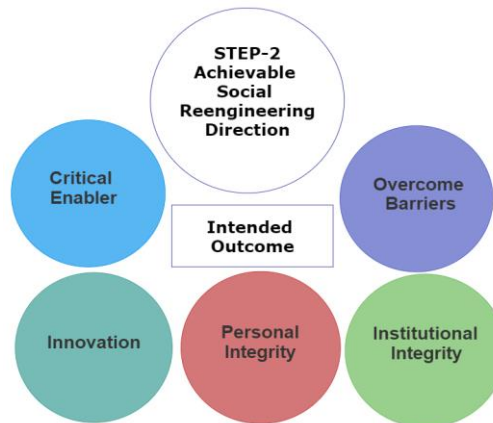
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Source: Authors

Organizational learning transforms the information into knowledge and improves the innovation and competitive capacity. Every organization's motive should be to minimize the impact of social engineering and unfold the benefits. To bring perfection in the competencies of the employees, the organization is required to adapt social re-engineering which will help employees in cultivating the habit of working towards continuous learning and improving core-competencies.

Social engineering must be monitored, controlled, and maintained by an organization in the form of social re-engineering. Acknowledging the work and personal ethics of employees such as loyalty and dedication could be considered as the best security tool available. Strong employee loyalty can result from caring management, up skilling, job satisfaction, which in turn can increase motivation towards cautious information handling and employee handling (McGee 2002).

Over the period of time the concept of loyalty between the employees and employers have changed however the employee's motivation can always play a big role in protecting the assets of the company including IPR and business secrets.(M Byars 2019)

Social engineering is a method where one's security system is hacked by simply attracting people. It is with the of human interactions that their personal information is divulged. It is a kind of psychological attack that leads to the disclosure of the information hence there is no need of any hard machinery and equipment. It becomes imperative that the organization be cautious that no harm is done to the organization. It is possible only with the help of meticulously planned theories and practices. The main motive of such practices is to bring awareness and reduce the effect of social engineering and reap the expected benefits from social engineering (Bansla *et al.*, 2019).

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