

Four Pillars of Sustainability for Telecom Industry in India

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ABSTRACT

In this paper we have a tendency to square measure discussing concerning four pillars of Sustainability that plays major role in telecommunication business. The four pillars includes social, economic, cultural and environmental, which supplies the transient information and needs the mixing of environmental objectives, maintaining natural resources and human health that function support of current and future growth. It describes the connection of mutuality between the pillars of Sustainability and the way it support the expansion of telecommunication industry: environment-economy (economic prices of environmental protection), economy-environment (pressure on environmental resources, atmosphere investment) environment - social (human welfare, health care by maintaining pure environment), social - environmental (ecological responsibility, consumption patterns), economy – social (providing jobs, smart living, income), social - economy (work quantity and quality), cultural.

Keywords—Sustainability, social, economic, cultural and environmental.

I.INTRODUCTION

Sustainability [1] can be a state or technique could also be maintained at a selected level for as long as is required. Sustainability development can be a three-dimensional conception aimed equally environmental part in property consumption of natural resources, protection of setting factors, health lookout of population, the social fact by equality, quality of life and stop status, economic by increasing Sustainability of those unit equal parts of the new development, whose objectives were started on time in documents on the topic property development. This technique consisted of four sides: economic, social, cultural and environmental, ought to be thought-about a complete and any parts should not run extra or less importance than others.

Telecommunication haven't exclusively become a very important need of human life but it put together plays key roles in connecting businesses and method business data around the globe. It put together most vital sectors of world economy as a result of the telecommunications trade is one altogether the foremost necessary sectors of the world economy, it too goes through similar kind The telecommunications sector includes a share of nearly ball of challenges attributable to powerful rivalries from competitors. The world annual gross domestic product (as per Gartner Iraqi National Congress and International money Fund's estimations). It uses over four of the worldwide power for its operations. By the highest of 2013, there will be no metric left u occupied

among the frequencies vary for communication among the US, in step with Federal Communication Commission reports.

Among the rest of the world, where the mobile penetration is high, similar eventualities unit Foretold. As mobile and net technologies unit gift, the image is extraordinarily plenty of transparent: there is very little doubt that the telecommunications sector is in command of the emission of heaps of oxide and produces plenty of noise and unwanted radiation, every directly and indirectly. Radiation pollution is predominantly attributable to this sector.

The expansion rate of telecommunication remains high, being the fastest growing sector in some developing countries. Carbon emissions from the data and communications technologies (ICTs) sectors globally are two hundredth of Internet emissions. It's nearly an identical as that of the worldwide aviation sector. It's put together among identical vary as a result of the web carbon emissions of North American nation. Obviously, this telecommunications manufacture associate ugly state of affairs like various industrial sectors to possess property growth, a careful analysis got to be performed. In this paper we have a tendency to tend to face live discussing regarding property in telecommunication trade, four pillars of property (social, economy, cultural and environmental).

II.NEED OF SUSTAINABILITY IN TELECOMMUNICATION IN INDIA

2.1 Importance of sustainability

In the contemporary world there square measure many issues the worldwide population has exceeded the seven billion mark and still growing at a considerably high rate. This increment and therefore the increasing demands of the increasing population push everything for a few reasonable exploitation. Environmental degradation and pollution of the ecosystems square measure among the foremost issues of the planet. It threatens the lives of many organisms. Heating is making extremely unbalanced state of affairs. Pollutions square measure accountable for many diseases and therefore the degradation of quality of life in numerous elements of the planet of these unwanted effects square measure because of the dearth of property within the businesses and human activities. Property is so vital for all the companies and technologies [2].

2.2 Importance of Sustainability in Telecommunication

Telecommunication sector [3] is probably the foremost omnipresent technology sector within the world. Since the arrival of cellular communication technologies, the telecommunication towers (transceivers) are found in most the areas wherever human settlements are found. The areas wherever electricity isn't on the market, the energy to the towers are provided through different sources equivalent to the diesel generators and battery systems. Therefore, this technology sector has direct impact on the setting and also the scheme.

III.FOUR PILLARS OF SUSTAINABILITY

3.1 Social Sustainability

Social Sustainability [4] considers however people, communities and societies suffer one another, and social group provisions and expectations for individual autonomy and realization of non-public potential, Participation in governance and rule creating, Citizenship and repair to others, Justice, the propagation of information, and Resource distributions that have an effect on the power of that society to flourish over time.

Sustainability of human flourishing is inherently a human process. The natural, built, and cultural surroundings during which humans live and thrive is that the outcome of generations of human interaction with the surroundings. as an instance, norms that are utilized by any cluster to assign relative values to such things as technological amendment, scientific inquiry, economic activity as well as profits and prices, risk, the nature, and human and dehumanized life dramatically have an effect on the choices those teams take and thereby the opportunities they permit to future generations.

3.2 Economic Sustainability

Economic Sustainability ^[5] wants that a business or country uses its resources expeditiously associated responsibly thus it'll operate in associate extremely property manner to consistently manufacture an operational profit. Whereas not associate operational profit a business cannot sustain its activities. Whereas not acting responsibly and victimization its resources expeditiously a corporation will not be able to sustain its activities inside the long-standing time.

Economics is that the study of other beneath conditions of insufficiency or the study of other with constraints. Specifically, we tend to are oral communication that economics is that the study of but individuals and societies prefer to use scarce resources which may have numerous uses to produce product and services, and distribute them, presently or inside the long run, among varied individuals and groups in society.

'Economic sustainability' implies a system of production that satisfies gift consumption level whereas not compromising future desires. The 'sustainability' that 'economic sustainability' seeks is that the 'sustainability' of the national economy itself traditionally, economists, forward that the supply of natural resources was unlimited, placed undue stress on the potential of the market to allot resources expeditiously. They to boot believed that method would bring the technological capability to fill natural resources destroyed inside the assembly process. Today, however, a realization has emerged that natural resources do not appear to be infinite. The growing scale of the national economy has strained the natural resources base. This has caused many commentators, appreciate Goodland, to question the feasibility of uncontrolled growth and exponential consumption.

3.3 Cultural Sustainability

Cultural Sustainability as a result of it relates to property development (to sustainability), should do with the maintaining of cultural beliefs, cultural practices, heritage conservation, culture as its own entity, and tries to answer the question of whether or not or not any given cultures will exist at intervals the context of the long-standing time. Culture is made public as a group of beliefs, morals, methods, and a gaggle of human info that is obsessed with the transmission of these characteristics to younger generations. Property is made public as a result of the flexibility to sustain or continue. The two concepts are tangled among social and political domains, and in and of itself, became one in each of the extra very important concepts of Sustainability.

1st mentioned in 1995, cultural property to boot presents viable decisions among the realm of policy, providing solutions to property development issues. Cultural property is assumed to be a basic issue, even a precondition to be met on the path towards property development. However, the theoretical and abstract understanding of cultural property among the frames of property Development remains obscure and consequently, the role of culture is poorly enforced at intervals the environmental, additionally as political and policy determinant the impact of Cultural property is found by investigation the thought of culture at intervals the context of Sustainability development, through multidisciplinary approaches and analyses. This suggests examining the best practices for delivery culture into political and policy additionally as smart domains, and developing means and indicators for assessing the impacts of culture on Sustainability Development.

Cultural Sustainability has invariably been classified below the social pillar of the three pillars of property, but with recent developments among this field thought unit being created thus on kind Cultural property its own pillar, thanks to its growing importance among social, political, environmental, and economic spheres. The importance of cultural property lies among its prestigious power over the oldsters, as decisions that unit created among the context of society unit heavily weighed by the beliefs of that society.

3.4 Environmental Sustainability

Environmental Sustainability implies that we have a tendency to live among the means that of our natural resources to measure in true environmental property, we'd like to confirm that we have a tendency to area unit overwhelming our natural resources, comparable to materials, energy fuels, land, water.etc., at a property rate. Some resources area unit additional abounding than others and so we'd like to contemplate material deficiency, the harm to atmosphere from extraction of those materials and if the resource is unbroken among Circular Economy principles. Environmental property mustn't be confused with full property that additionally ought to balance economic and social factors.

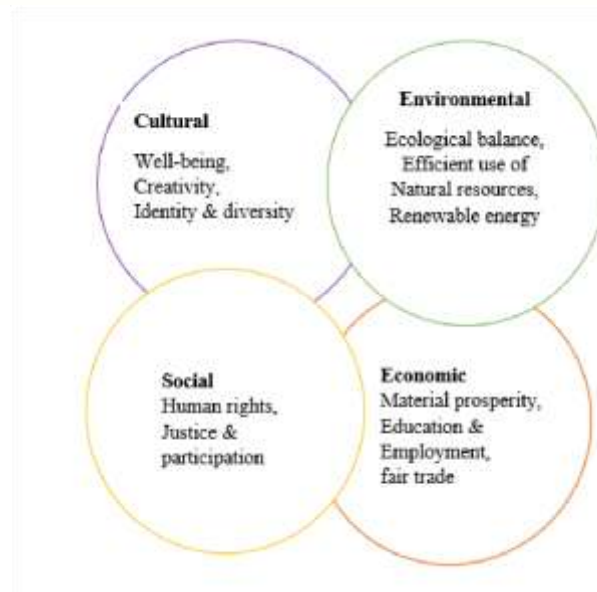


Fig.1 four pillars of sustainability

IV. RELATING FOUR PILLARS OF SUSTAINABILITY TO TELECOM INDUSTRY

4.1 Economy-environment

Growing pressures on the environment of economic activities as a results of increase have diode over time to wreck the natural surroundings. The necessity for food was ensured by intensive agriculture. Shopper desires have diode to increasing energy intake utilized altogether areas of production of product and services. Hub surroundings was laid low with the problem of gas greenhouse we've got an inclination to feel today. We've got an inclination to unit all inhabitants of Earth by warming. The ecological crisis could also be taken as a fancy development of incompatibility natural surroundings to meet the needs of home consumption.

Investment plays a necessary role among the economy-environment relationship, environmental technologies got to be applied to holds some clean, pure surroundings. Property Development on light-weight pine economy-environment relationship is not quantity, but quality, and seeks to impose environmental standards, removing waste, unwanted impact of human activities on the environment, waste management, accomplish productivity, trim emissions of stuff and gas emissions, rehabilitation, transition to property agriculture.

Essence environment-economy relationship is determined by applying one in each of the essential principles of environmental policy - the bad person pays. Imposing economic instruments of surrounding Sal policy among the kind of atmospheric taxes is to launch the positive aspects of economic development and thus the environment and overcome those negative [6].

4.2 Environment-social

The environment provides sensible quality of its factors - water, air, soil relying on the pressure it receives from human activities and natural. State of the environment is closely involving pressures on them, and actions to reduce the negative effects that come capsulated in environmental policy. Human health, food security, thus exploitation labor and process unit conditioned by keeping pure surroundings, selection one in each of the few existing tries, to order environmental-social interface was a study commissioned by the Dutch Ministry of the environment in late 1990, thus on operationalize the link between the two pillars with concrete indicators. Model was to stipulate four key concepts: environmental protection, social, environmental policy and policy. Objectives of property development thought of from the attitude environmental and social relationship unit maintaining human health by reducing gas in control of warming, access to potable water, waste management. In April 2001, the ninth session of the Commission on property Development recognized the necessity for added property patterns of production, distribution and use of energy. At the earth Summit in 1992 it had been recognized the mandatory role of indicators to help countries produce selections on property energy development indicators.

The link between social dimension of property development and natural resources reflects people around the world got to have access to basic energy services as affordable business energy. EU Energy Policy sets the priority energy desires, safety and security of energy give two issues unit thought of happiness to the social dimension - equity and health. Social equity is one in each of the cornerstones of property development involving degree of equality therewith energy is distributed, but power systems unit procurable and also the manner they are raised prices to verify accessibility. Energy ought to be procurable to any or all or any at a decent worth.

Lack of or restricted access to energy services marginalizes poor and restricted their ability to spice up their living conditions. Lack of electricity generally means, among various things, inadequate lighting, telecommunications restricted. At the house level, accidents can happen in poor families caused by exposure to pollution from the employment of candles for lighting. All sectors of the economy rely on safe and cozy energy. Accessibility of jobs, industrial productivity, urban and rural development and each one major economic activities unit powerfully laid low with the energy consumption.

4.3 Social – environment

It's exceptional the two-dimensional character of revenue growth thus quality of life. As social scientist same, higher incomes cause modification shopper desires. If the consumption growth remains unsustainable nature, negative environmental impacts would be felt through the adverse effects on health and therefore quality of life. This may be why property wish to maneuver to property consumption should not be delayed and in terms of the link of the two pillars, social and environmental, human responsibility is vital. Energy indicators of economic

dimension includes two themes: the employment and production of models and security of give. Energy use per capita reflects world energy intensity of a society.

Energy use per unit of gross domestic product may well be a marker of overall energy intensity of the economy. Addressing energy security may well be a key objective among the standards of property development of the many countries. Energy give disruption may cause financial losses and economic difficulties. To support property development objectives, the ability ought to be reliable, snug and affordable. Web energy monitor trends, accessibility of fuel stocks unit useful for evaluating energy security. About education, Tomas Torbjornsson in article Attitudes to property development among Swedish Pupils, unconcealed in proceed Social and activity Sciences, WCES 2011, that property development is therefore necessary, but elusive, and thus the role of learning is incredibly necessary for our future. As an area to start among the study, the author had the basic values expressed among the worldwide organization Millennium Declaration: freedom, equality, solidarity, tolerance, respect for nature and shared responsibility.

The author conducted a study with two groups of students United Nations agency felt questions on respect for nature, supported the Millennium Declaration: commonness, equality. The results showed that girls have an even bigger sense to support nature. To the question: "Would you facilitate to elevate funds for nature protection twenty-seven take advantage of girls responded affirmative and exclusively 13 boys. Economy-social: one in each of the objectives of property development documents is clearly providing jobs. Employment rate of labor is that the instrument of a country's economy and living standards.

4.4 Social-Economy

Human factors contributes to growth through its productivity relying on job satisfaction, health standing, investment in human resources that starts from the time of enrollment among the institution. In Romania, public expenditure on education as share of gross domestic product slightly can increase from year to year, starting in 2000 from 3-2 try to reaching the proportion of 4-3 in 2009. world fight Index (a live of fight among the context of property development in conjunction with fight beneath the capital of Portugal Strategy Index) is calculated from information on pillars: basic wants (institutions, infrastructure, macro economy, health and education), factors to increase efficiency (higher education and training of human resources, market efficiency, openness to new technologies), factors of innovation (business setting quality and innovation).

Relating to specific health indicators, death rate fell from sixty fourth place in 2008 and was stratified fifty 5 in 2011, period was stratified fifty-five for 2008 and for 2011 climbed to position sixty-six. Enrollment rate in primary education has occupied the bottom place for 2008-2011, in 2008 once she placed at selection sixty-seven, ascent then on eighty-eight. The foremost competitive quantity for Balkan nation was 2008-2009, once

enrollment rate stratified thirty-four, and web access in schools was stratified forty-eight, native services analysis stratified sixty-three and went down the ninety fifth place in 2010-2011.

Concern for human health could be an element of the property development strategy. A healthy nation throughout that prevails the prosperity is that the bottom of a props economy. That is why it's difficult to stipulate separate the economic from the social, economy depends on the social relations and its constant interaction with the setting. Sachs (1999, Social property and Whole Development: Exploring the dimensions of property development) argues that development itself is basically two-dimensional, so talking relating to developing "social" refers to 1 a part of the event of all totally different dimensions' potential. Thus (2003) defines social property as a guarantee every for gift and for future improvement of welfare (social, economic, environmental) every between generations, on the one hand, and within constant generation, on the other hand.

Therefore, this approach offers focus on rising social conditions from one generation to a special, and thus the interactions between the three spheres of development social, environmental and economic. Social quality area unit usually shaped as aspects love assessing housing, health, education, gain population. Relying on the specialty, each folkscareis about property development from a definite perspective: environmental biologists and ecologists ponder primary aspect, economists place the forefront costs and prices, sociologists unit of measurement plenty of interested in gain distribution [7].

V. CONCLUSION

The telecommunication sector should be supplied with sustainable energy sources. Depending on the locations of the sites, the cell towers should collect the power from appropriate sustainable energy sources. We have presented some of these alternative sources are: Solar cells, Wind energy, Hydrogen fuel cells, Biomass energy. Small scale hydro-electric power sources the above sustainable initiatives are taken into consideration by the individual operators in collaboration of their vendors. Energy harvesting technologies are getting popular and new techniques for green energy production are emerging every year. Government of India is also promoting the green initiatives for telecommunication. It is expected that with proper regulation and monitoring telecommunication sector of India can be made sustainable in the coming decades. Sustainability is essential for the modern industrial world. In telecommunication sector it is very much important as the sector is growing very fast and has got a huge infrastructure which consumes a large amount of energy. Telecommunication is suggested as a Solution for sustainability and considered as a green option for several business processes. This sector now has covered more than 90% of the human settlement areas. It has direct impact on both the plants and animals. Therefore, this sector itself has to be sustainable from all respects .

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