

Reinventing Communication for Industry 4.0

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Abstract

The immense technology-led disruptions that we are witnessing around us are compelling both individuals and organizations to respond in new and novel ways and means as well. This is fundamental now because there are consequential changes at the structural as well as the functional aspects of our existence across the globe due to the mindless progress in science and technology. Further, in a world that is so tremendously networked, so unprecedentedly globalized, and is so hypercompetitive today that, most of the traditional behaviour both professional and social, which are by and large looked upon as the relics of the industrial revolution, are themselves becoming atrophied. Further, with the emergence of exciting and even strange technologies like Augmented Reality, Artificial Intelligence, Internet of Things and so on, there is also much resultant uncertainty and ambiguity around both the future and nature of work, workplaces and practices. Consequently, we are witness to the emergence of new learning contents and styles like adaptive learning, modified and customized learning and a host of new other approaches. Simultaneously, the skillsets required to meet the new and emerging workplace challenges have also undergone stark transformations and makeovers. In other words, it has become imperative to re-architect our institutions, practices and protocols that are supposed to deliver the competences required to address and adapt to the emerging new order. In this new scheme of things, 'learnability' is strongly believed to be the new skill that is now expected to drive excellence in both individuals and institutions. It also must be kept in mind that, learnability rides high on communication. So, to keep pace, communication, especially business and professional communication must concomitantly evolve as well.

Keywords

Globalization, Disruption, Futuristic technology, Skillset, Learnability, Communication.

1. Introduction

The euphoria of a hugely anticipated globalized existence has largely paved ways for the world to shrink further into ‘customized cottages’ delightedly engaged in the realm of ever unfolding technology to connect and assist in every aspect of life. Gone are the community specific ethnic existence that expressed and connected in unique, traditional and specific manners. Communication today has successfully overcome the silos of micro community driven essentials and taboos. As a result, the broad contours of culture which were till very recently largely expressed in terms of defined ethnicity across the globe too has diluted and by and large has stopped frowning at the strange and the familiar. It is mediated communication which has thus connected the human race as never before. However, this unprecedented interconnection of people across geography, politics, religion, culture and language has not only changed communication across communities but it has also brought about a radical change in our perception, attitude, behaviour and practices both at home and work.

2. Mediated Communication

Mediated communication will refer to any communication paradigm or situation where a medium augmented and enabled by technology is introduced to aid and assist the interaction. The prolifically growing global propensity to use digitalized communication as in emails, text and instant messaging, hypertexts, distance learning, internet forums, USENET newsgroups, bulletin boards, mobile apps, streaming videos, videoconferencing and many more are examples of mediated communication (Subrahmanyam Kaveri, Greenfield Patricia (2008). However, a very important aspect in this this paradigm is language mediation. As defined in the Common European Framework of Reference for Languages, Language mediation is a generic term and is the sixth competence defined which refers to any function, process or activity in which a text is communicated from one language to another. This has a special relevance in the ever-shrinking globalized context of

cross-cultural communication. Especially in contexts like India, where society is polyglot and diversities myriad, where dialect, tradition, and rituals change every 100-kilometers, language mediation has to naturally assume a special prominence and critical influence in almost every communication and communicating situation.

However, in the paradigm of communication, the importance of the non-verbal aspects of communication can never be over emphasized nor can one ignore the communication principle that though seeing is more powerful than hearing, it is best to experience the message in order to be influenced by the communication. Further in contexts Like India, challenges due to poverty, illiteracy and drudgery makes it almost imperative to replace text with suitable visual content that would at once attract and arrest attention. This is also the fundamental precinct of infotainment practices where the use of emerging technology like the immersive technologies will play a very critical role especially while designing and strategizing communication for both business and entertainment.

In this context, it becomes obvious that, we need to constantly reinvent our means and manner of communication to maintain a sustained dialogue with our audience. On the one hand, this remains easy because man is fundamentally gregarious and must constantly remain networked with his fellow being for both survival as well as his success. However, on the flipside, it is an intrinsic human need to remain entertained. It is common knowledge that, workplace productivity increases with periodic breaks. Such breaks become even more meaningful when they come laced with recreation which dilute drudgery and monotony of routine work. Man has invented numerous means of entertainment since time immemorial, but it is the progressive evolution of technology that is providing us with new tools for expression. Further, the globalized world that we are living in today is certainly and systematically breaking down our traditional silos that we had created for our convenience of living in our insulated self-sustaining micro communities. What we are witnessing around us is the sustained unraveling of a new exciting and a very powerful order in which the arts, sciences, and technology are continuously merging to create a broad spectrum of unprecedented possibilities. Progressive evolution of technology not only provides us with new tools for communication and expression, but also delivers new social perspectives for our daily survival. Hence, although every

invention impacts the society, yet it is the innovations in communication that categorically influence culture at a broader level and behaviour at a more specific level.

3. Industry 4.0

If we look back at history, we shall realize that what we now call the Industrial Revolution of the 18th -19th century, is the first milestone in the long evolutionary march in the history of production and manufacturing that marks the transition to new manufacturing processes in Europe and the United States. During this first stage, also now referred to as the industry 1.0, the manufacturing and production of goods moved from small individual units like small shops and homes to the large-scale production units called the factories. Further, these factories were mostly found in the cities which led to unprecedented urbanization that brought in its wake a paradigm shift in culture as people moved from rural areas to big cities in order to work and livelihood. However, what is relevant in this discussion is that, this first milestone which marks the transition to new manufacturing processes using water and steam was hugely beneficial in terms of manufacturing a larger number of various goods and creating a better standard of living for some against the vast majority that began their struggle against drudgery, unfavourable work conditions and most importantly new workplace challenges in terms of adaptability and new desirable skillsets. This struggle of the many is still on and what is also constant is the concomitant search for new means and methods of addressing such challenges,

Industry 2.0 or the second milestone in the history of the Industrial Revolution was pegged in the 19th century with the discovery of electricity and assembly line production. The legendary Henry Ford sponsored the development of the assembly line technique of mass production by taking the idea of traditional mass production in a slaughterhouse in Chicago: Ford carried over these principles into automobile production and drastically altered it in the process. While earlier, one single station completely assembled an entire automobile, now the vehicles were produced in partial steps on the conveyor belt reducing cost and increasing speed but demanding once again new skillsets and workplace challenges.

In this sequence of things, Industry 3.0 refers to the third stage in the Industrial Revolution which was at its incipience in the seventh decade of the 20th century through partial automation and using memory-programmable controls and computers. These were innovation and new practices in science and technology that made it possible to automate an entire production process in certain esoteric areas without human intervention and assistance. Here too, it is easy to discern both the changing skillsets and learnability that industry was desiring from its workers at every level and how new behaviour and practices emerged due to adaptation to the new order of things.

We are now poised at the Industry 4.0 or the fourth milestone of this long evolutionary march of Industrial Revolution. Typically characterized by the application of ICT or the Information and Communication Technology and its progressive outcomes to industry, Industry 4.0 builds further on the production systems and mechanisms of the Industry 3.0 that already was supposedly acclimatized to progressive Information & Computer Technology. A predictive outcome of this leapfrog progress of industry 4.0 amongst other things, is to evolve into what is being projected as the smart factories. In lay man's terms, these would be the companies that would largely use a robotic manufacturing fleet to ensure greater productivity at a much lower upkeep cost. Profession jargon in this context would mean that, 'production using the props of network connection of cyber-physical production systems in the industry 4.0 is expected to reach the stage of almost autonomous production'.

The companies using robotic fleets for manufacturing are also called the dark factories or 'the lights-out factory' Here, as James Cook, an applications engineer at Stäubli Robotics says that, robots can help lower building costs by optimizing space as these manufacturers can 'fit a larger number of compact cells in the same space to increase production without adding heating, lighting or cooling to the cost of the building the use'. Such fully autonomous robotics industrial workforce is expected to become the order of the coming times as this would increase productivity at reduced costs to the company. In this context, the example of FANUC, the Japanese robotics company that has since 2001 been operating a "lights out" factory for robots may be cited. In FANUC, unsupervised robots, for a stretch of 30 days, are capable of are making 50 other robots in one single day. Here, as the Fanuc vice president Gary Zywiol states, "Not only is it lights-out," but also "we turn off the air conditioning and heat too."

So, in this emerging context that focuses heavily on interconnectivity, automation, machine learning, and real-time data we are looking at a highly volatile situation is anticipating exhilarating cost cutting situations as well as the stark uncertainties of retrenchment and attrition of a normal workforce. It is in this context, communication, especially business communication, will have to reinvent, reinforce and evolve further to meet new challenges.

4. ICT and Evolving Communication Paradigm

It has become a common propensity today to depend on mediated communication and wittingly or unwittingly take advantage of digital networks for most of our communication needs. [Nunes Mark (2011)]. Whether it is simply a tete-a-tete with friends and family or a serious business negotiation and discussion or for that matter any other communication, the interlocuters from almost all denominations of every society across the world are getting used to and comfortable with the facilitations provided by the ever-evolving ICT driven and supported communication. Looking around, we shall realize that, people across India, like the rest of the world, are spontaneously welcoming with open arms the penetration of and access to mobile phones in a very impressive manner. In fact, smartphones are looked upon an existential necessity rather than a luxury. Today, it may be said that, at least one member in almost every family has a smartphone. And thanks to the android, the users of this technology have now access to myriad application or apps available on the app stores which can help specific users with their specific needs. For instance, there are now apps especially designed for women to become aware of most of the issues that are important and critical to their wellbeing including their health issues. Hannah Nichols (2018) has very successfully augmented menstrual health management (MHM) by compiling a list of apps which helps to keep track of the (menstrual) period cycles. But big problems should signify even bigger opportunities. What disruptive technology is indicating is massive in terms of our lifestyle and practices. Starting small but thinking big will be a key to using evolving technology to solve current as well as imminent problems. How do we, for instance, use such technology to induce behaviour change is a challenge that should start small but roll out greater and all encompassing possibilities.

5. Digital Literacy and Communication

The ICUBE 2018 report by Kantar IMRB shows that, in a population of 133.92 Crores (2017) in India, it is estimated that digital literacy still has not gone much beyond the 6 percent (224 Million are computer literates). Though, in quantifying the internet usage in India, the data indicates that, it has exceeded half a billion people for first time, pegged at 566 million in December 2018 and was expected to register a double-digit growth to have touched 627 million people in 2019. A significant component in this annual growth of 18 percent in the Internet usage in India, was the growth and usage in rural internet. This in turn indicates that, the secondary access to technology has been steadily growing at a significant pace in our country where according to an estimate, 295 million active Indian internet users are urbane population and some 200 million live in rural India. Globally speaking too, India occupies a significant position of being the third largest consumer of Internet. [<http://www.internet-worldstats.com>, (2018)], [Vernacular Content Report (2012)]. Of these active users, it is a whopping 97 percent that uses the mobile phone as one of the devices to access the Internet.

The number of smartphone users in India is expected to rise by 84 percent to 859 million by 2022 from 468 million in 2017, according to a joint study by Associate Chambers of Commerce & Industry of India and PwC. It is also assumed that in the next three years, 10 percent of the India population will own tablets as compared to the 5.3 percent in 2017. While exploring the tendency of Indians to use mobile apps it was seen that the number of apps installed by smartphone users in India range from five to 207, the average number of installed apps on a phone is 51, said a new report on Wednesday. However, it is obvious that, people do not use all the apps they install. Most of the people in India use just about 24 apps on their smartphones, according to the research from technology research consulting firm TechARC. The findings of the "TechARC DIGIT" report indicate that there are some users who go on installing apps without much of a thinking and understanding. However, the study indicates that by category, the social media apps lead the usage with 76 percent of the users using them on a daily basis.

This emerging trend is indicative of the fact that, in future, communication will be the primary driving factor for economy. Innovations in telecommunication and the amazing developments in infrastructure is going to ensure that opportunities will not be limited either by time, distance or money. E-commerce is gradually becoming a

sanguine enabler and an equalizer by providing easy and quick access to desirable and critical products, services and resources to all and every. This is the much desired and aspired customization of both creativity and consumption that is expected to transform not only the global economy, society and geopolitics as well.

6. Learnability and New Media

Learnability is going to be a critical skill required to adapt new communication style and means in times to come. Learnability per se and especially in this context cannot be imposed but on the other hand, should ideally be facilitated. This facilitation should ensure spontaneous and motivated participation of the learners and not rest at a passive ‘head nod’ participation. Participation is deemed important as it is supposed to lead to a context of conversation and when conversation is systematized, we will have ‘discourse’ at our disposal. New media that we are now getting used to is fundamentally equipped to ensue participation due to the very nature of its technology mediation. New media is new primarily new in terms of its novel modus operandi that emphasize on interactivity through participation. This in turn, leads to the customization of content and communication resulting in the elusive ownership of content (Boukes Mark 2018). It is this customization of content and communication leading to the ownership of content that creates the conducive environment for leaning and learnability.

As mentioned earlier, that, new digital tools of communication like the smart phones, computers, laptop, tablets and the like have become easily accessible to ordinary men even in rural or remote areas, and the internet and the ever-evolving mobile phone technology have changed the way people communicate. This new technology induced social revolution should be tapped to harness new levels of learnability which is essential to cope with this new age communication.

7. Conclusion

The buzzword for the emerging industry driven by a medley of myriad futuristic technologies is certainly interconnectivity. This is something we all appreciate and, in a sense, this interconnectivity is what man has ever been working for. However, what is unnerving in the unfolding paradigm is the anticipated reduction in human presence and participation in a ‘robotomized’ work environment. Man is afraid of

losing his job to intelligent robots, but we must also remember that, man was equally afraid of losing his job to computers. Today, we see how man has been capable of harnessing the computer for his benefit and how enterprises, big, small or the massive are computerized in industry 3.0. This was possible with new learnings and adapting new skillsets. Industry 4.0 too, in a similar manner, is or will be asking for new skillsets and adaptive learning which in all possibility be driven by technology as well. What needs to be done is to proactively respond to the emerging ecosystem that is cutting across our tradition social and economic silos and embrace emancipation form our practices that reap advantage emanating from an unfair hierarchy of status at work and society. In this new order of things, it is our ability to adapt to new technology, use it meaningfully both as its user and its author, finetune our education in accordance right from the primary education, re write our curriculum to bring out the learners from the passive classrooms to where the action is, dilute the divide between the rich and the poor, the young from the old which will in all probability settle the ruffled feathers of the ongoing times.

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