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From The Editor's Desk

I take this opportunity to thank all contributors and readers for making ***Tecnia Journal of Management Studies*** an astounding success. The interest of authors in sending their research-based articles for publication and overwhelming response received from the readers is duly acknowledged. I owe my heartfelt gratitude to all the management institutes for sending us their journals on mutual exchange basis, and their support to serve you better.

We are happy to launch the Thirty Three issue of our academic journal. The present issue incorporates the following articles:

- Digital Communication and Pandemic
- Authentication Using Key Stroke Dynamics
- Relevance of Blue Ocean Strategy for Attaining Higher Growth: A Case of Patanjali Ayurved Ltd.
- Strategic Management in the 21st Century -Mckinsey 7S Model
- Security of Internet of Things of Application & Challenges - A Review
- A Study of Harvard Framework for HRM
- Onboarding Process: A way to reduce the Attrition Rate
- Group Insolvency Regime in India: Challenges and Developments
- Social Media: Changing Our World
- A Study of Social Media: Shaping the New World
- Dominance of the Digital Media Over the Development Paradigm
- Security of LFSR Based Stream Ciphers Using Genetic Algorithm: Emerging Technologies of Digital Media

My thanks to the authors, Neha Sharma, Meenakshi Yadav, Vijay Kumar Khurana, Isha Mittal, Sandeep Kumar, Prabhanjan Kumar, Sneha Mishra, Sweta Bakshi, Ruchi Srivastava, CS Shefali Sethi, Anand Sharma, Yogesh Maheshwari, Monika Pawar, Gunjan Sharma and Manpreet Kaur , who have sent their manuscripts in time and extended their co-operation particularly in following the American Psychological Association (APA) Style Manual in the references.

I extend my sincere thanks to our Chairman Dr. R. K. Gupta, who has always been a guiding light and prime inspiration to publish this journal. I am grateful for his continuous support and encouragement to bring out the Journal in a proper form. I also appreciate Editorial Committee Members for their assistance, advice and suggestion in shaping up the Journal. My sincere thanks to our distinguished reviewers and all team members of Tecnia family for their untiring efforts and support in bringing out this bi-annual Journal.

I am sure the issue will generate immense interest among corporate members, policy-makers, academicians and students.

Editor

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General Information

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- The received articles for publication are screened by the Evaluation Board for approval and only the selected articles are published. Further information on the same is available in the "Guidelines for Contributors".

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Digital Communication and Pandemic

Neha Sharma*

Abstract: *Establishments and organizations are increasingly using advanced media to communicate with partners on a daily basis and in emergency situations. Following that, this section provides a bibliographic review of advanced online technology in the pandemic situation. The inductive methodology of the grounded hypothesis was used to catch and decipher the findings. The articles were thoroughly examined, including their examination questions, procedures, and comprehension of the findings. Following that, this commitment separates the opportunities and challenges that arose during an exceptional Coronavirus (Coronavirus) episode. Overall, it implies that there is room for foundations and associations to incorporate advanced and online media into their emergency communications and risk management plans. This will put them in a better position to engage in solid and straightforward dialogic exchanges with a variety of partners.*

Introduction

The world is dealing with a global disease outbreak caused by SARSCoV-2, also known as COVID-19, a coronavirus. Governments and public health institutions around the world have implemented social distancing and stay-at-home policies to combat the COVID-19 pandemic (World Health Organization, 2020). 'The Internet, it is true, will change everything. It is not correct to say that everything will change *(Useem, 2000)*. COVID-19's impact could be described in the same way twenty years later. It has impacted nearly every region of the globe, every aspect of human experience, every private and public enterprise, and every government and regulatory agency.

While explicit limitations change between nations, government arrangements to handle the COVID episode regularly include shutting schools, unnecessary shops and organizations, and restricting public transportation and spaces, just as friendly social occasions. Under these conditions, public association has definitely diminished. With the adjustment of freedoms to meet face to-face, new difficulties emerged in remaining socially associated. This article gives an account of individuals' progressions in advanced correspondence dependent on information gathered around two weeks into the pandemic's inescapable US episode, and the cultural and logical consequences thereof.

According to industry reports, advanced media use increased significantly during the first months of the pandemic as people spent more time at home due to COVID lockdowns *(Kemp, 2020)*. Such increases were particularly noticeable for social media and messaging apps, but the unprecedented uptake in video conferencing apps and programmes was particularly noteworthy. This merits further investigation given people's reliance on information and communication technologies (ICTs) for social interaction in such stay-at-home situations. In this article, we will answer the following questions: How will the COVID-19 pandemic affect people's computerized correspondence practices? On these occasions, who was bound to increase and decrease

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their computerized correspondence? Furthermore, how might these changes in people's electronic correspondence affect society and grant on advanced media use after the pandemic?

The use of correspondence networks has expanded, and media content with regards to the pandemic has overflowed with news, points of view, data, and disinformation in the fields of interest of this part. For the time being, social and modern propensities have moved. States have raced to create and change arrangements on the fly (Iosifidis and Nicoli, 2021). A few media associations that are at the focal point of the web-based advanced economy have profited from it, while others have been washed aside.

While the extent and speed of the impacts have been bewildering, a portion of the media changes have followed unsurprising examples. Broadening of content sources, quick development of interchange traffic, and a shift from physical to online exercises and trade are largely old patterns that COVID-19 has sped up but not started.

The current pandemic was remarkable for some, but a predictable fate for humanity, particularly for those living in areas where the previous century's severe acute respiratory syndrome (SARS) and Middle East respiratory disorder (MERS) outbreaks were generally severe. Coronavirus was clearly the story of 2020, but it communicated with others that had longer horizons – China's rise, the relative decline of the United States, and the developing strains between them; environmental change; imbalances across countries and within them; Britain's exit from the European Union; and the Trump administration in the United States. Responses to the infection were, as Arundhati Roy put it, "similar to a synthetic test that abruptly enlightened secret things" across the board *(Roy 2020)*.

Review of literature

According to Andrei Richter, "Coronavirus has created a situation of global and public concern for data availability." Under international law, the right to express oneself is protected as a fundamental right, but it may be subject to restrictions, such as those imposed for the sake of public safety. Arrangements to manage the pandemic in Europe have frequently not asserted a formal discrediting from the secured right of free expression, yet "have had an unbalanced sway on data opportunity." Richter examines three areas of concern in a number of European countries: restrictions on information access, prohibitions on disinformation, and monopolization of information flow. He discovers examples of COVID-related limitations that have been "already abused to solidify control over the information flow." They paved the way for the establishment of a state monopoly on truth in some countries.

Elena Sherstoboeva and Valentina Pavlenko created eight models to evaluate the impact of advanced reconnaissance devices used in these six East Asian locales on security and personal information security. While "public procedures have been generally different across the area, changing from absolute to mandatory specific and intentional particular reconnaissance, there is a typical provincial pattern towards a more gathered and obtrusive model that doesn't appear adequately legitimate for the insurance of general wellbeing during the COVID-19 period," they believe.

*Kyong Yoo*n examines the East Asian country that was ranked highest in the OECD in a June 2020 report for its ability to mitigate both the health and financial effects of COVID-19. Because of the country's already well-developed computerized infrastructure and economy, advanced reconnaissance could be delivered quickly in South Korea. 'By advancing its advanced computerized innovation and infectious prevention framework, the public authority, frequently in conjunction with the news media, encircled the talk of public pride and accordingly gathered residents to further conform to the brought together pandemic control,' Yoon writes. The overwhelming response urged the government to present a 'Advanced New Deal' in July, which would include plans for a 'information dam' to collect broad data from public and private sources that could be used to investigate the 'large information based economy.'

Yoon is concerned about the 'standardization of remarkable information reconnaissance gauges,' as well as the 'techno-idealistic talk that arose in South Korea's response to the pandemic, through which the country is characterized and envisioned as a forward-looking computerized state.'

The Turkish government has a long history of "distress" with basic voices on friendly media', as indicated by *Asli Tunç.* She reports the numerous laws passed and the record of there were demands by experts for the expulsion of content from the web before the pandemic. In spite of Because of the 'draconian lawful structure', the country's web-based media scene is "amazingly energetic". New limitations, the first piece of a bundle of monetary guide measures, were passed by the two specific occurrences reignited the debate over friendly fire. Media oversight Turkey's new game plans purportedly draw on Germany's 2018 The Global Network Initiative has condemned the Network Enforcement Act for presenting 'accidental yet possibly grave ramification with the expectation of complimentary articulation in Germany, across the possibly engaging dictator pioneers in the EU and around the world.

Findings

Digital Media during the Pandemic

According to (Di Maggio et al., 2004) the advancements in cutting-edge correspondence that we discovered in our data suggest a modernized irregularity award. As per automated unevenness research, individuals' Internet access and capacities fluctuate, which can influence the advantages they can get from correspondence headways. In the United States, a fourth of the populace doesn't have access to broadband internet at home, and almost a fifth doesn't have a cell phone (Pew Research Center, 2019b, 2019c).

Lower-pay Americans are fundamentally more regretful, with 44 percent of the population missing home broadband Internet connection and 29 percent lacking wireless Internet access. Aside from access quality, there are a number of barriers to advancement, such as slow Internet connections and difficulty staying aware of the utility of equipment (Gonzales, 2016; Marler, 2019).

Besides, certain individuals will most likely be unable to utilize advanced media successfully enough to supplant eye-to-eye correspondence during the pandemic. Individuals who rarely use informing, voice, or videoconferencing applications should figure out how to download and install them on their devices, and then figure out how to use them.

For example, less well-informed individuals may likewise accept that it is harder to perceive and partake in new developments in specific strategies, such as arranging a virtual birthday celebration or playing table games. Subsequently, certain gatherings are more in danger of becoming separated from their social climate than others when in-person collaboration is restricted due to removing rules *(Hargittai and Micheli, 2019)*.

During the COVID-19 pandemic, mechanized aberrations might be exacerbated by an absence of (admittance to) cutting-edge help. As the world progressively depends on cutting-edge innovation for correspondence, the less taught may need more help than at some other time in recent memory. *(Eynon and Geniets, 2016;* Hunsaker et al., 2019; Micheli et al., 2019) People normally depend on their family and companion networks for cutting-edge help. Social prohibition and remain-at-home guidelines might be making it harder to get progressed help, especially for people who depend on eye-to-eye social connections. Our discoveries show that during the pandemic, more experienced individuals, just like those with restricted Internet abilities, are probably going to diminish automated correspondence. While the Internet can likewise be utilized as a modernized help asset (e.g., web search devices, casual local area destinations, and get-togethers), these assets are normally utilized by those with further developed web information and capacities. *(Micheli et al., 2019*).

(Kemp, 2020; Koeze and Popper, 2020) analyzed that Less educated people may grow increasingly separated from society as they have less access to resources for creating better teaching methods. While in-person collaboration is constrained, a substitute example is occurring in which individuals are currently logically talking through video chat programmes and organizations for correspondence weirdly.

This sort of reception may be more normal among the more technically knowledgeable. These new adopters, on the other hand, may include people who use advanced technology less frequently and with less capability, but are currently feeling constrained to communicate on the web. As per our discoveries, 63% of people with insufficient Internet capacities demonstrate an expansion in computerized correspondence using any of the ways depicted.

On a worldwide scale, "up close and personal" computerized collaboration through video-conferencing programming has seen increasing take-up as of late, with considerably bigger numbers in nations with stricter lockdown measures. Thusly, the pandemic's lockdown insurance might give people a chance to overcome motivational hindrances to attempting and taking on new concentrated methodologies. By then, the inquiry becomes: would this be able to assist us in making a little stride ahead as far as decreasing computerized varieties?

Effects of Digital media at present

At the hour of composing, we don't realize whether individuals' new electronic correspondence models will proceed once the stay-at-home, expulsion, and lockout methods are completed. Individuals might meet up close and personal once more. Be that as it may, considering the extensive effect the COVID pandemic has had on individuals' expansion in electronic correspondence rehearses all over the planet, advanced media examiners ought to assess how the pandemic may change our field and examination inquiries later on (Global Web Index, 2020).

The new types of correspondence that have arisen because of the pandemic have a wide scope of suggestions for how things will be created later on. According to one point of view, it's conceivable that individuals' advanced correspondence developed because of a longing to check in with friends and family more consistently during this specific well-being emergency and in light of the fact that in-person techniques for correspondence are less doable.

It's additionally conceivable that, because of lockdown measures and remain at-home approaches, individuals have additional time available to spend on such correspondence. When the crisis has passed and individuals are less worried about their loved ones' everyday circumstances, advanced correspondence strategies can return to how they were previously, and very close correspondence can continue.

Will the people who recently didn't depend on mechanized innovation for correspondence, but have now embraced new mechanical ways to deal with staying in contact with friends and family, keep on doing as such later on? It's conceivable that video calls will turn out to be more common as the pandemic advances. Other mechanized specific methodologies that have multiplied all through the pestilence, similar to the utilization of instant messages, voice discussions, electronic media, email, and internet games, represent a similar test. According to Global Web Index (2020, pp. 99–100), the truth will eventually emerge about how the pandemic affects individuals' media work in the long haul.

The COVID-19 scourge has brought up some intriguing issues for online correspondence specialists. Our work as a discipline is a higher priority than it has been in recent memory, as proven by the different exploration projects related to COVID-19, just as media and interchanges. At the same time, we ought to think about the pandemic's more extended term suggestions for our examinations of cutting-edge media work.

One strategy for researching long-stretch ideas is to investigate how the pandemic has given shape to cutting-edge lopsided characteristics. In this piece, we gave insights about instances of take-up similarly to reduce in automated correspondence, and how these models relate to sociodemographic factors similarly to stresses over Web access and capacities. Considering these revelations, even long after the pandemic, differential modernized media use practices may continue.

More established people, those with uncertain Internet associations, and those with restricted Internet capacities might be avoided with regard to this advanced correspondence take-up, which comes when such correspondence is generally significant. As we keep on going up against vulnerability to the return of our towns, tending to these disparities turns out to be significantly more significant.

More established people, those with uncertain Internet associations, and those with restricted Internet capacities might be avoided with regard to this advanced correspondence take-up, which comes when such correspondence is generally significant. As we keep on going up against vulnerability to the return of our towns, tending to these disparities turns out to be significantly more significant.

Moreover, the outcomes of these improvements for political correspondence and reporting, training and learning, wellbeing correspondence, science correspondence, and an assortment of different disciplines ought to be researched over the long run. The investigation of individuals' correspondence and media practices is probably going to turn out to be more fundamental as computerized media turns out to be more urgent for regular day-to-day existence—a cycle that has been facilitated by the overall pandemic.

Conclusion

In this article, researcher found that in the pandemic situation online and digital media has played huge role. Due to worst conditions people couldn't step out for almost whole year but there was digital media to connect with their family and friends. All things like business, study, shopping and many more happened digitally.

Digital media has played important role in pandemic and after the pandemic digital media is on his peak. All the work is done on the online platform and it has made the work condition very simple.

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AUTHENTICATION USING KEY STROKE DYNAMICS

Meenakshi Yadav*

Abstract: *Passwords are an antique authentication methodology. With the recent hacks and leaks, keeping an arcanum secure is proving to be more difficult day by day. An answer to the present drawback is to feature different factors to authentication. The foremost non-invasive of that is writing patterns. This is often referred to as Keystroke Dynamics. It's the careful temporal order information that describes precisely once every key was pressed and once it absolutely was discharged as someone is typing using a keyboard. Keystroke Dynamics uses the behavioral aspect of the way and rhythm during which different types of characters are pressed on a keyboard. The rhythms of the keystrokes of a user are measured and a novel biometric template is developed of the user's writing pattern for any future purpose of authentication. This paper aims to make a customizable and protractile keystroke dynamics authentication system and a dashboard that is standard and simple to use in conjunction with existing authentication systems.*

The investigations reveal that using typing pattern for 2 factor authentication has clocked a 50% faster rate of signing in than conventional results. The average response time of an authentication request on our system is ~100-120ms which is a very good time for any Two Factor Authentication system.

Keywords: *Authentication, Down Time, Flight Time, Hold Time, Keystroke Dynamics.*

Introduction

Over the years the necessity of a faster methodology for the implementation of 2 Factor Authentication has fully grown. With the expansion of 2 Factor Authentication, the general complexness in verification has escalated. Tons of users don't need to travel through the same trouble and need a faster technique of authentication whereas maintaining a high level of security at an equivalent time. Here is where Keystroke Dynamics comes in. It effectively solves for each, the difficulty of speed and security in one go. Technical accomplishments over the previous decade have caused improved network administrations, particularly within the zones of execution, responsibility, and accessibility, and have primarily ablated operation prices due to their additional productive and economical use.

Keystroke Dynamics may be a live add on that authenticates the access to PCs by recognizing sure distinctive patterns in a user's writing rhythm and pattern. There is also a tendency to feel that the utilization of keystroke dynamics may be a natural and vital selection for cybersecurity. This argument comes from the actual fact that similar neuro-physiological factors that build written signatures distinctive are exhibited in a user's writing pattern. The well-known or frequently used strings, such as different signatures will be very consistent. Also, recognition that is supported using the writing rhythm is not intrusive. It is very applicable for

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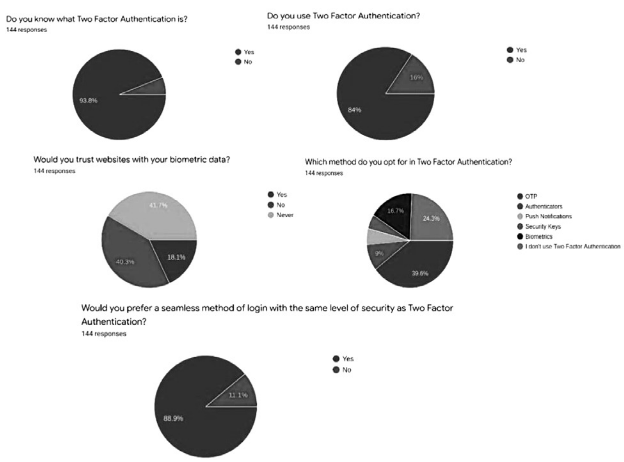
computer access security since the users will be typing using the keyboard for a matter of fact.

Organization

The paper has been organized in the following sequence. It begins with the introduction of the paper and is followed by the system description that is used in order to achieve the required model. Then the results and analysis is discussed followed by the conclusion.

A. Survey conducted

A thorough survey was conducted to determine the general public's current opinion of Two Factor Authentication (2FA).



B. Results and Inferences

The general public consensus knows what two-factor authentication is and uses it in their everyday life. They use a variety of such methods ranging from OTP, Push notification and Biometrics. There is a hesitation when it comes to providing biometric information to external systems. The fact that a huge part of society wants a seamless implementation of 2FA makes it paramount for a quicker version of existing methods.

C. Literature Survey

The behavioural features such as voice patterns and keystroke patterns haven't yet led to stable user authentication systems due to lack of an acceptable level of accuracy. Going through a few papers that have been surveyed in order to take inspiration for the project have been discussedbelow.

The papers cited [1-8], it is discussed whether keystroke dynamics as a method to authenticate 100K users is suitable or not by using a typing test. In order to do this, they first went on to analyse the extent to which this method was similar to a Siamese Recurrent Neural Network (RNN) which is used when the very little data is available per user to authenticate users and a similar scenario in free-text keystroke authentication. With over a thousand users for network testing, a population size that is in comparison to the previous works, TypeNet gets an equal error rate of 4.8% by using 5 enrolment sequences only and a single test sequence for every user with 50 keystrokes for a single sequence. Using similar amounts of data for every single user, as the number of test users is increased to 100 thousand, the performance with respect to 1K reduces relatively by a little less than 5%, demonstrating the ability of TypeNet to expand the user-base well at a large scale. The Aalto University keystroke database was used to conduct the experiments. As per knowledge, it is the largest free-text keystroke database that stores more than 136 million keystrokes from 168 thousand users.

In the papers cited [9-15], a solution is discussed which enables us to model a person's keystroke dynamics and also minimizes the number of samples used for the definition corresponding to the template that is used for reference. There is an increase in the size of the reference of each user up to a maximum size of 10 due to the double serial mechanism. A GA-KNN method of verification was also evolved in the paper to help the adaptation process achieve better performance. The recognition errors are minimized by the weights of the different distances used in the KNN classifier and the GA optimization. There is a great increase in the performance of this model with respect to the previous work. Limitations: Using a single password to train models can never be accurate. The model needs to be trained against thousands of passwords along with typing patterns of the respective users to be more accurate and provide a higher level of security.

In the papers cited [16-24] preliminary studies are presented in the papers upon an authentication system using keystroke dynamics based upon a purely statistical model that provides an additional security layer to existing security layers. Three features that are distinct are used, all of which are in milliseconds. The first is the key hold time, the next being key flight time and the final being key latency time. By crowdsourcing our evaluation we were able to obtain data from many users with all levels of typing expertise. We were able to get data from different users having different levels of expertise in typing by crowdsourcing to achieve a FRR of 2.54% and a FAR of 0% respectively. Limitations: Only three features were taken into consideration for user authentication. More parameters would give better accuracy and authentication.

The papers cited [25-30] state the concept of exploitation keystroke dynamics as a type of second layer authentication in net applications is bestowed. This methodology will demonstrate a user with high accuracy and might be used as another to CAPTCHA tests, security queries and image alternatives that area unit being employed nowadays. We've got developed a operating web-based platform during a browser setting that enforces the planned second-layer security. The keystroke temporal arrangement information was run through a program written in JavaScript that took the JSON object as is and bust it down into 3 sets of data: Key Hold (KH), Key Press (KP) and Key Interval (KI) latencies. The results show that once the planned methodology is applied, the Equal Error Rate would be 10.5% by solely considering his/her keypress latency behaviour.

The final citations [31-37] provide à sharp contrast between different keystroke dynamic methods that are plausible and the advantages of individual features. The classification technique used is of the highest order and results obtained are ideal. Limitations: Although highly efficient this approach has à significant limitation in execution time due to the high number of features and classification techniques required for authentication. The research is also carried out on phone devices, and the data reflected a significant impact on the accuracy of the model, caused due to the device-specific features like screen size.

II. System Description

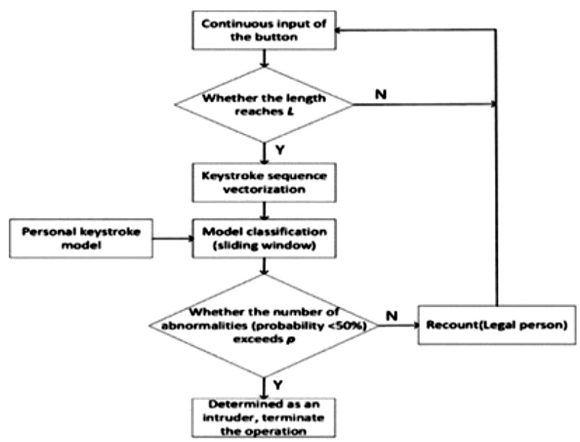
Keystroke Dynamics can be used to distinguish between different users based upon a study on their typing patterns. Every other user has a typing pattern which is unique and that is very hard to replicate. There will always be minor variations characteristic of a user that cannot be replicated. This forms the basis of the study of Keystroke Dynamics. In this paper, the aim is to implement User Authentication Based on Keystroke Dynamics and provide a dashboard to allow testing.

Keystroke dynamics uses three features predominantly:

- Hold time – It the time taken between the press and the release of a key.
- Keydown-Keydown time – It is the time taken between the pressing of two consecutive keys.
- Keyup-Keydowntime–Itisthetimetakenbetween the release of a key and the pressing of the next key.

The system aims to be an extensible one, allowing the users to customise and try out the various detectors available in order to figure the best one for their use-case. The system also has algorithms designed with the end-user in mind, and is thus modular and easily customisable. The key logger and the JavaScript files required for the login and signup pages can be added to any existing page with minimal changes to the logic. This makes integration very simple with changes only required in the HTML.

Figure 1: Decision table for authentication



A. Components

1. Backend and Database

The backend of the system is written in Node JS to allow for high concurrency and scalability, even when used in systems with high throughput. The database being used is MongoDB, which further improves the performance of the system, allowing for easy extensibility and providing high availability. The backend is written completely in Node.JS with no external dependencies on other environments, allowing for a simple and streamlined setup. The backend also performs the majority of the calculations, so the client side never has access to sensitive data and the computing cost is shifted to the server, instead of the clients' systems. It also has a lot of minor optimizations like using the database to cache frequently computed values in order to decrease the Round Trip Time on each login request, significantly improving the performance of each request. The system averages ~100-120ms for each authentication request, which is a very good duration for any secure authentication system.

2. Detectors

Manhattan - Manhattan Distance is defined as the distance between 2 points that is measured at right angles along their axes. It is also widely known by the name city-block distance due to its resemblance to walking along a city block. Manhattan distance is used if you want to place less emphasis on outliers, as it will try to reduce all errors equally since the gradient has constant magnitude. It is also more efficient than Euclidean distance when dealing with high dimensional data, which is the case in this project.

Manhattan (Individual) - For the Individual version of this detector, we take two parameters, namely the SD Multiplier (M) andathreshold value(T). Thedistanceofeachkeystroke from the mean of that keystroke in the database is calculated. This distance should lie in the range [" M • SD, M • SD]. If at least T % of the inputs lie in the accepted range, the attempt is considered accepted. This detector performs best with a low amount of data (<10 attempts), after which the accuracy deteriorates.

Manhattan (Population) - This detector uses the same concept of Manhattan distance, but instead of checking each keystroke, it calculates the distance between the input vector and population mean vector. If the distance falls within a set threshold, the attempt is accepted. This detector performs much better than the Individual detector when being used on datasets with more than 5 elements and is extremely sensitive.

Manhattan Filtered - Manhattan Filtering works on the principle of filtering out outliers from the user dataset. This yields a clean dataset that is much more accurate and useful to determine valid attempts. This helps get rid of erroneous inputs that can occur naturally. This detector is thus more sensitive than the Manhattan Detector.

Manhattan Filtered (Individual) - This works on the same principle as the Manhattan (Individual) detector, with acleaner dataset. This improves its accuracy significantly, especially in smaller datasets. This detector performs best with a low amount of data (<10 attempts), after which the accuracy deteriorates.

Manhattan Filtered (Population) - This works on the same principle as the Manhattan (Population) detector, with a cleaner dataset. This improves its accuracy significantly, especially in smaller datasets. This detector performs much better than the Individual detector when being used on datasets with more than 5 elements and is extremely sensitive.

Mahalanobis - Mahalanobis Distance is another method which can be used for outlier detection and group classification. It is chiefly used with the Chi-Squared and the PCA techniques. It is calculated by taking the sum of squares of all the non-zero standardized principal components. Mahalanobis Distance is one of the best methods to detect outliers and gives results with high accuracy.

We use it as one of the filters to detect any pattern that might be an outlier.

3. Frontend

The Frontend for the system is written in HTML/CSS/JS to keep things simple and easy to reuse. The only external dependency is the library to render charts. Also, there is a dashboard that allows for visualization of the data on each login attempt and view as well as customize the various parameters used to authenticate the user. This allows the user to test out which detector or combination of detectors works best for them and adjust the security and accuracy of the system by tweaking the parameters. The HTML and JS are interlinked with an algorithm that lets the user change only one object in the JS file and update the HTML accordingly to add more elements. Updating values and handling interactions are all done by the script with no user interaction required.

III. Results And Analysis

After the models have been made and the tests carried out, it is has been a successful statistical model that can be effectively used a method of authentication. It proved to faster and more secure than the authentication systems being used today. Given below is a description of how it has been possible to achieve these results and the various statistical tests that were carried out in the demo. The time taken to authenticate has been used as a performance metric for gauging the model.

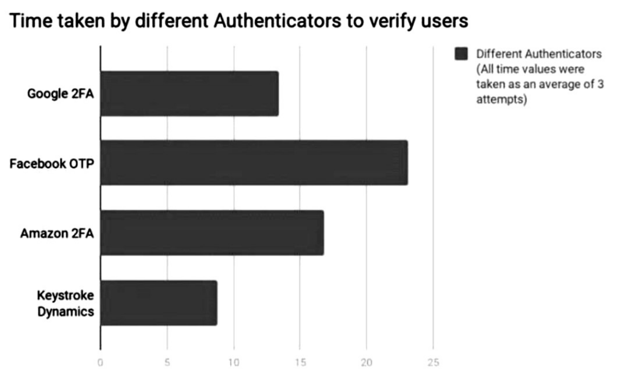
A. Data description

The user's keystrokes will be tracked and a detailed feedback is provided to the administrator of the site. This data will include the user's keystrokes and the time taken for each keystroke. The keystrokes can be tracked to allow the system to get more refined over time. These data will be stored in the system and used to generate analytics for the administrator to configure the system for better performance. The system will also show graphs for each individual user so that the time variations and different patterns can be used by the system to refine itself for the particular user without affecting the rest of the population data.

B. Performance metrics

The demo has been proven to be almost 50% faster than current industry standards. In terms of security, it is up to the administrator to tweak the settings so that no one can bypass the authenticator. It is not ready for deployment yet but with the correct configuration and the future work planned out, it can certainly turn into a solid alternative to the industry's current 2FA options. The average response time of an authentication request on our system is ~100-120ms which is a very good time for any Two Factor Authentication system.

Figure 2: Time comparison of different authenticators



C. Statistical tests

It is noticeable that the system can generate enough statistical data to perform tests automatically. It has been developed with the administrator's satisfaction in mind and having fulfilled that duty to that end. In the following picture, it is evident that all the data required for testing has been shown in the dashboard.

Through the testing, it has generated the following graphs for a single user. The graphs can be used to analyze patterns and refine the user experience for a particular user. The system will keep improving over time as it gets more data to analyze. It will also improve the accuracy of the detectors for that particular user.

IV. Conclusion

In this paper, it is tended to address the sensible importance of keystroke dynamics as a biometric for authenticating. Keystroke dynamics is the method of analyzing the manner in which the user types by observing keyboard inputs and authenticating them by supported habitual patterns in their typewriting

Figure 3: Hold, Flight and downtime graphs

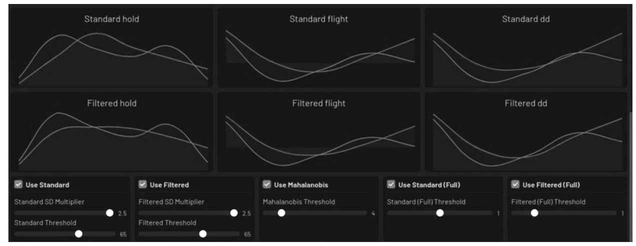
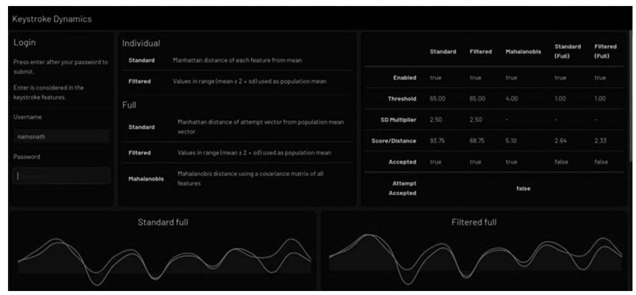


Figure 4: Login screen with the authentication graph (in blue) and the attempted graph (in red)



rhythm. It tends to review the {present this} state of keystroke dynamics and present some techniques to validate the user counting on his typewriting pattern. It can be argued that though the utilization of a behavioral attribute (rather than a physiological characteristic) as a symbol of identity has inherent limitations, once enforced in conjunction with ancient schemes, keystroke dynamics permits for the look of a lot of sturdy authentication systems than ancient password-based alternatives alone.

The investigations reveal that using typing pattern for 2 factor authentication has clocked a 50% faster rate of signing in than conventional results. The average response time of an authentication request on our system is ~100-120ms which is a very good time for any Two Factor Authentication system.

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Relevance of Blue Ocean Strategy for Attaining Higher Growth: A Case of Patanjali Ayurved Ltd.

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Abstract: *During the past few decades, competition has been at the heart of corporate strategy. Today, one can hardly speak of any strategy without involving the language of competition: competitive strategy, building competitive advantages, and beating the competition. The blue ocean strategy is regarded as extremely rewarding for attaining higher growth.*

This research focuses on principles and factors that facilitate the creation of Blue Ocean Strategy. The firms pursuing Blue Ocean strategy is usually more profitable than the firms fighting head-to-head competition. However there are some risks associated with blue ocean strategy. This paper highlights common risks associated with it. The paper also suggests the ways for coping with such risks and implementing blue ocean strategy successfully.

Keywords: *Blue Ocean Strategy, Competition, Growth, Market Share, Patanjali.*

Introduction

Blue Ocean Strategy has evolved during long study of more than 150 strategic moves spanning more than 30 industries over 100 years. The blue ocean strategy refers to the creation by a company of new, uncontested market space that makes competitors irrelevant and creates new consumer value often while decreasing the cost. Rather than finding the ways to compete with the companies that are already established in the market, the firm seek to find new consumers that have been neglected.

Blue Ocean thinking has not only created new industries, it has also created exceptionally profitable industries. Among 108 companies, 86% of business expansion emanated from existing competitive business. This type of expansion produced 62% of total revenue but only 39% of total profit. Blue Ocean business showed almost reverse figure: their expansion accounted for 38% of total revenue and 61% of total profit.

The corporate quest for profitable innovation drives the need to develop the Blue Ocean Strategy.There are several driving forces behind a rising imperative to create blue oceans. Accelerated technological advances have substantially improved industrial productivity and have allowed suppliers to produce an unprecedented array of products and services. However just because a company can produce more does not mean that there is demand for increased supply. It becomes important for companies to enter Blue Ocean to find new opportunities. There are three proposition essential for the success of Blue Ocean Strategy:

i. Value proposition:- developing an offering that attract buyers

ii. Profit proposition:- creating a business models that enables the company to make more money through its offering

iii. People proposition:- motivating the people working for or with the company to execute strategy

Success and growth of Patanjali Ayurved Ltd. (Patanjali) can be analysed with the aid of a Blue Ocean Strategy. Patnajali was started in 2006 as a private company by famous yoga guru Baba Ramdev and an ayurveda expert Acharya Balkrishna.It has

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achieved tremendous presence around the globe and throughout India in a very small time since its inception in 2006. Patanjali has more than 300000 retail counters, 2000 distributors, multiple warehouses in 18 states and proposed factories in 6 states. Selling via its 1,500 Patanjali Chikitsalayas (operated in franchise mode), 3,500 Aarogya Kendras (operated in franchise mode), 7,000 stores in villages and 5,600 mobile marketing vehicles, clocking a turnover of INR10,500 crore in the FY 2016-17.

It has evolved as a game-changer in Indian consumer goods industry with its ayurvedic, herbal and organic range of groceries, medicines, and home &personal care items. The company manufactures 444 products including 45 types of cosmetic products and 30 types of food products. Patanjali Ayurvedic manufacturing division has over 300 medicines for treating a range of ailments and body conditions, from common cold to chronic paralysis.

Patanjali has created a new market space; it has focused on that part of demography which could not associate themselves with most of the consumer goods companies. National-level FMCG giants are facing the heat, as Baba Ramdev steered Patanjali in making a direct headway into kitchen and bathrooms of the 'aam' Indian consumers.It continues to capture the market by organizing extensive yoga camps throughout the country, and introducing & promoting its products through those camps. Herbal products were eyed as dear and premium offerings, sourcing of the quality ingredients at such a massive scale for consumer products was also a Herculean task. Now, this is where Patanjali made the cut; it has consistently advertised its products hyping on quality and 'shuddhta' (purity) thereby aspiring to dispel consumers' doubts on that score. To keep its marketing strategy lucid, it has eliminated complex marketing structure.

The major reason for Patanjali's success is its unique business model of a single umbrella brand, a wide spread of categories, exclusive store network and a close association of a personality. Patanjali's combination of low prices, 'natural and pure' proposition and 'swadeshi' positioning are widely acknowledged to be the reasons behind its success. Patanjali's path-breaking sales and distribution strategy are driving its exceptional growth trajectory. It is surging ahead to take on and beat well-established FMCG players like HUL, Dabur, Godrej Consumer Products, Emami and Marico.

Literature Review

Some of the important reviews are as follows: According to Shaunak (2016), the comparison of strategies between Patanjali and its competitors is as under (Figure 1):

Figure 1: Comparison of Strategies

Red Ocean Strategy (HUL, Dabur, Marico etc.)	Blue Ocean Strategy (Patanjali Ayurved)
Competes in existing market space, which is caught in a bind presently	Created uncontested market space in the FMCG sphere by virtue of a niche in the lines of low-cost 'pure' Ayurveda products
Strive to beat the competition mostly through low price offerings	Made the competition irrelevant as its lack of profit motives allow for further reinvestment
Exploit existing demand, by offering low room for loyalty-building	Created and captured new demand by commercializing 'backyard herbalism'
Make the value-cost trade-off systematically	Broke the value-cost trade-off by pricing its products at a significant percent below its rivals
Align the whole system of a firm's activities with its strategic choice of differentiation strategy or low cost strategy	Aligned the whole system of a firm's activities in pursuit of differentiation and low cost

Source: https://introspectmarketing.wordpress.com/2016/02/21/making-sense-of-the- patanjali-phenomenon-a-successful-blue-ocean-strategy-2/

Khanna (2015) carried a study about the perception, satisfaction level and attributes of consumers regarding Patanjali products. The data was collected by the researcher from 100 respondents in Punjab. It was found that consumer were highly satisfied with Patanjali products due to reasonable prices and due to curing ability. Due to hazards/ side-effects created by chemical products people tend to shift to natural products.

In a recent report, IIFL highlighted that Patanjali Ayurved Ltd has, in a short span of less than a decade, recorded a turnover higher than what several companies have managed to achieve over several decades. There is no doubt that Patanjali is a disruptive force in the FMCG space and is a credible threat for the incumbents. IIFL is of the view that the growing appeal of ayurvedic and natural products, along with factors like low price and allowing consumers to express Indian-ness in an increasingly nationalistic environment, will help Patanjali achieve sales of Rs.20,000 crore by FY2020.

According to V S Kannan Sitaram(Operating Partner, India Equity Partners), as quoted in Sharma (2016) said that Ramdev has found resonance with people who want advice on the kind of life they should be living. He has tapped into this consumer need brilliantly.

A recent report published by Agency FAQs states that Patanjali featured in the 2015 Brand Trust Report, a study conducted by brand intelligence and data insights firm Trust Research Advisory, and was identified as one of the seven most trusted Ayurvedic brands in India (Sharma, 2016). The same report quotes Broadcast Audience Research Council (BARC) data that lists Patanjali advertisements as the third-highest broadcast commercials on Indian televisions. According to a recent survey, factors responsible for growing popularity of Patanjali Products are summarized in table 1.

Table 1: Drivers for Growing Popularity of Patanjali Products

S. No.	Factors for Growing Popularity of Patanjali Products	%age	Rank
1	Quality of the products	62	2
2	Comparatively less price of products	91	1
3	Swadeshi (Indian) Products	19	5
4	Natural Packaging of products	11	7
5	Curiosity to use new products	42	3
6	Ayurvedic (natural) products	38	4
7	Brand is associated with health and Baba Ramdev	15	6

Objectives of the Study

The objectives of the study are as follows:

- To study the effects of Blue Ocean Strategy on the success and growth of Patanjali
- To explore the problems and challenges faced by Patanjali in the present competitive scenario and their management

Research Methodology

The study is based on secondary research to trace the Growth of the brand Patanjali Ayurveda through Blue Ocean Strategy. Data and information for the study is collected from secondary sources like subject related books, newspapers, magazines, various websites including Patanjali Ayurved Ltd.

Principles of Blue Ocean Strategyfor Patanjali The six principles are discussed as follows:

- **Reconstruct market boundaries**

Re-evaluate the boundaries of the industry by shaping new Patanjali business model: Patanjali has strategically evaluate the key competitive drivers such as customer's taste and preferences, future expectation of customers, product quality, price, and industry standards. Create 'strategical canvas' and present each key factor graphically to explore the new dimensions of the industry: To expand the market boundaries into the wide blue ocean, analyse different strategical models of top players of the industry and search out for the key factors that are not considered by any of the market players. By considering the needs of all buyers (already in the market that want to enter the market and buyers that not yet decided to enter the market) one can re-formulate the horizon of the industry.

- **Focus on Big Picture, not the Numbers**

Patanjali always aims to have a big picture of the industry, only having statistical data will not behelpful. In recent times, people have become more health conscious which is evident from the fact that many companies are investing money in organic and Ayurvedic products. Patanjali, with its Ayurvedic product line, is able to somehow capitalise on this changing consumer behaviour and hence capture more market share. To maintain its sense of direction, company can use 'strategical canvas' a graphical presentation of industry position, cost, prices etc. The canvas can reveal 'value curve', and clarify the possible opportunities. Patanjali uses undifferentiated targeting strategy, as the main objective Patanjali is to offer healthy products to all people. It needs to improve the existing technologies so that innovation can deliver new benefits to customers and market appreciate the innovative changes.

- **Reach beyond Existing Demand**

Real growth lies beyond the existing demand. Generally businesses focuseson current demand, and that limits its boundaries of expansion. To have a pool of consumers, always focus on potential future consumers. Analyse the need of consumer and adjusting the product so as to increase demand of the product. Every industry has a common key factor that influence the demand of the product, to have a pool of consumer focus on that particular key factor.

- **Get the Strategic Sequence Right**

Execute business strategy sequentially to achieve "value innovation". Technological innovation is not necessarily a 'value innovation'. Value Innovation is the simultaneous pursuit of differentiation and low cost, creating a leap in value for both buyers and the company.Patanjali products are available at an attractive discount as compared to their competition. The company sources products directly from farmers and cuts on middlemen to boost profits. Hence, they are able to reduce their raw material procurement cost and are able to produce goods at a much cheaper price. Currently, Patanjali is making 20% operating profit which is higher than the industry average. Patanjali has product's usefulness, ease, handiness, safety, entertainment value and environment friendliness inlight of each factor affecting customers buying behaviour. To develop Blue Ocean strategy ask four logical questionsin sequence:

i. Does your product have exceptional utility?
ii. Is it fairly priced to appeal to a large number of buyers?
iii. Can you create it at the right cost to earn a profit?
iv. Are there any impediment to discourage the market from accepting your product?

- **Overcome& Manage Key Organisational Hurdles**

Tipping point leadership shows managers how to mobilize an organization to overcome the key organizational hurdles that block the implementation of a blue ocean strategy. Some major challenges faced by Patanjali are:

Loyal consumer base and competitive price:-Baba Ramdev's fanatic consumer base of about ~70 million has proved to be a great head start for him. This large fan base comes from an Ayurveda-freak nation and years of conducting yoga sessions. Further, Patanjali's products are priced lower than their key competitors for price sensitive Indian consumers, who now see more 'value' in Patanjali's products.

Appeal to rural-urban 'aspiration and conservatism-driven' consumers:- Apart from appealing to the above consumer base, Patanjali also managed to attract rural-urban aspiration and conservatism-driven consumers by launching modern consumer household products which promised purity with goodness, on the lines of major players.

Anti-foreign campaigns:-Time and again, Baba Ramdev raised voices to boycott 'foreign' products, ranging from shampoos to colas, by showing their ill-effects. This further created a loyal consumer base that promoted word-of-mouth advertising for Patanjali and cleared ways for different product categories.

Loyal employee structure:-It is said that most of their employees are volunteers and, from manufacturing to selling, most of them do not take regular wages.

No financial burden and minimal advertising budget:-Baba Ramdev's Rs.40 crore corpus, that he garnered from his Yoga shivirs, satellite television shows and donations, were utilised to kick start the empire. Further, Patanjali relies heavily on word-of-mouth advertising, with a few commercials (such as for cow's ghee) to strengthen its brand identity and promise.

- **Build Execution into Strategy**

Since blue ocean strategy involves uncertainty and risk, creating trust among all participants is essential. Link the '3 Es' - engagement, explanations and expectation- with the actual process of developing the strategy and implementing it on at all the levels of organisation. Patanjali needs to frame and practice rigorous implementation framework to touch up on various developmental aspects:

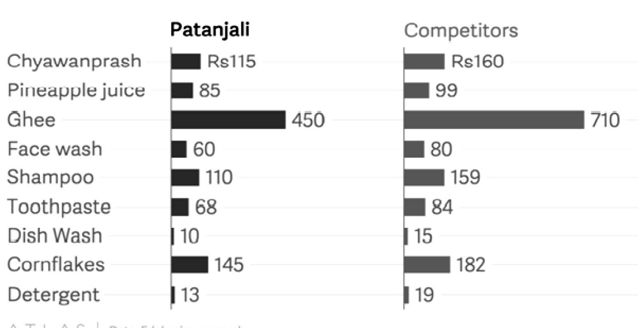
i. Firstly, encouraging Research and Development to inculcate and promote thetradition of Ayurvedic medicines and herbal formulations.
ii. Training human resources in production units and service centres. Production unitsmust have experts for quality products. The Service Centres (yoga centres, Ayurvedicspa, studios, etc.) should have qualified professionals to serve the customers.
iii. Identifying issues related to exports by knowing the target market and segment tobe catered in that market.
iv. Establishing of an authority to check authentication and quality of products before selling.
v. Having registrations with various regulatory authorities in the country and abroad to run the business smoothly.
vi. Preservation of Intellectual Property Rights becomes critical with the products and services being exported to foreign countries.
vii. Infrastructure improvisation by bringing in new technologies at factory outlays, equipments' manufacturing and service offerings.
viii. Getting the products and medicines ISO 9000 certified to export to majorinternational markets.
ix. Opening of new centres in areas like north-east. Enforcing R&D and infrastructure in are as rich in flora and fauna of ayurvedic importance.
x. Medical tourism can be uplifted in collaboration with the hospitality industry
xi. Building over all awareness by using promotional mix. Presently, it is word of mouth promotion.

The Price Corridor of the Mass

The Price Corridor of the Target Mass is a tool managers can use to determine the right price to unlock the mass of target buyers. India is a price-sensitive market where any new player who enters the market tries to make a dent by crashing the price. Yoga guru Baba Ramdev-backed brand Patanjali Ayurved delivers premium product but with an economical price tag. Pricing plays an important role in putting Patanjali ahead of its esteem competitors. The pricing strategy is clearly penetrative pricing because Patanjali knows that it cannot capture the market with higher prices. Patanjali Ayurved has entered in a huge competitive segment in the Indian FMCG industry.

To set the strategic price, first identify the price range that attracts the mass of target buyers. Key to determining the strategic price is for managers to understand the price sensitivities of buyers. Patanjali's target segment comprise of health conscious people who prefer 'value for money' natural products. Patanjali has products targeted at children (health drinks) and elderly people (some ayurvedic medicines). Also an illustration of aggressive advertising, it has advertised its honey as being 43% cheaper than Dabur honey for a 250 gm. pack. Again, a 500g bottle of Dabur honey is priced at INR 199; while a 500g bottle of Patanjali honey is available for INR 135 (32% cheaper). Patanjali has also steered clear of hard-hitting celebrity endorsements. Almost all products of Patanjali are affordable in nature (at a price 15% - 30% lower than the competition), hence the income segmentation strategy has worked. Initially the products were targeted at lower and middle income groups but with the present turnover of close to a billion dollars. Figure 2 presents price comparison of Patanjali Products with its competitors.

Figure 2: Price Comparison



Source: Edelweiss Research, Retrieved from https://www.theatlas.com/charts/EJn1wLFYx

Managers should consider two categories of products/services that are beyond an industry's boundaries in identifying the price corridor of the mass. Patanjali's products have buyers not only from the lower and middle income segments but also from health conscious upper middle and upper income segments. These 2 segments have found value in Patanjali's natural and ayurvedic products. The pricing strategy has helped Patanjali establish itself in the marketplace. Established brands which did not consider Patanjali as a competition initially, are now forced to sit and take notice.

Next, thecompany must consider two sets of factors:the level of legal and resource protection the new offering has to block imitation; and the degree to which the company owns some exclusive asset or core capability that can also block imitation.The higher the level of protection against imitation, the higher the strategic price can be within the price range that still attracts the mass of target buyers

Effect of Blue Ocean Strategy on Patanjali

Patanjali, Ayurveda recently posted revenues of Rs.10,561 crore for the financial year 2017 (April 1, 2016 to March 31, 2017). That's double of what it posted last year. What's more, while most FMCG firms in the country grew around 8% to 12% annually over the past five years, Patanjali has grown over 20 times. A 2017 Nirmal Bang report revealed that the brand had already reached nearly 53% households in personal care and 26% in food products, up by nearly 100%, since last year. ICICI Securities believes that Patanjali is a greater threat to HUL and Dabur.

Dabur's growth slowed in the March quarter in 2017 compared with the earlier part of the fiscal. Its consumer care division contributed to 69% of sales in fiscal 2010 and grew 14.6%, lower than the April-December figure of 16.1%. Key segments within this division are oral care, hair care, foods (juices) and health supplements (Chyawanprash). While health supplements did well in the March quarter, perhaps due to the longer winter; the other key categories appear to have grown at a slower rate. Growth in its consumer health (over the counter products) division, that contributes around 8% of sales, too, was slower, being 15% in the full year against 16% last year.

Dabur reportedly admitted that the sales of its honey were affected by Patanjali's aggressive honey launch on the online portal. In a first in over two decades, sales dipped by 8.50 percent in the first quarter of 2017 fiscal over the previous year's corresponding period. For a company used to robust double digit sales growth in this category, the decline came as a bolt from the blue. "Our competitor was selling honey at a price 30-40 percent lower than ours," recalls Sunil Duggal, a Dabur CEO. For the next four quarters, honey sales kept sliding, slowly but surely eroding Dabur's dominant market share of 60 percent; it reached a new low of 40 percent.

To make matters worse, the volume market share of Dabur's flagship Chyawanprash brand also fell by almost 2 percent—from 58.9 percent in October-November 2015 to 57 percent during the same period in 2016. The cost of production is a key factor in deciding the final price of the product. Dabur's suffered a loss of 2% market share in Chyawanprash in Q3FY15-16, while its oral care segment gained 1% market share.

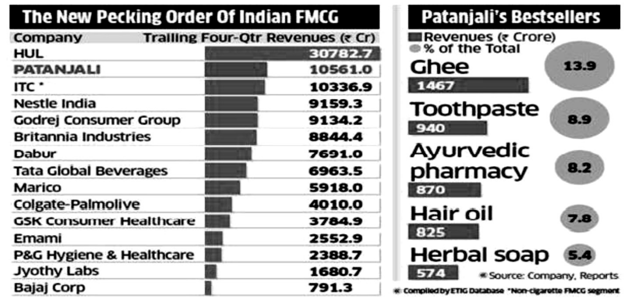
HUL's revenue growth has been consistently struggling in the past seven quarters from 13.2% in quarter ending June 2014 to 3.2% in quarter ending December 2015. During the same period, ITC's FMCG business has fallen from 11% to 7% in terms of revenue growth.

Business Standard (Rakshit, 2016) quotes the Nielsen report, "Anticipatewith Analytics: The Future of FMCG", and states that all the major Fast-Moving Consumer Goods (FMCG) players in India are currently dealing with an extremely slow rate of growth. The report mentions names like HUL and ITC in particular, whose growth rates have fallen from 13.2% and 11-12% to 3.2% and 7%, respectively, and compares them to the over 2,000 cr turnover by Patanjali Ayurved Ltd., a recent player in the market. According to a report published by Kotak Institutional Equities, Patanjali garnered a 4.5% market share in the toothpaste segment, while Colgate's share dropped by 0.6% to 57.3% (Newsroompost.com, 2016).

A wide variety of HUL's segments like soaps, shampoos, detergents, dish wash and oral care are directly affected by Patanjali. However, the impact on revenues of each segment of HUL may be small. HUL's oral care segment, which consists of brands like Pepsodent and Close Up, is losing market share to Patanjali.

Patanjali's success story seems to have rubbed on Dabur, as the FMCG Company is now planning to invest Rs. 500 crore this year on its manufacturing facilities. As part of its expansion plans, Dabur is investing Rs. 250 crore to set up a new plant in Assam for manufacturing health and personal care products. Hindustan Unilever is also upgrading its manufacturing facilities and has added a number of natural products to its product portfolio. Figure 3 presents new pecking order in FMCG sector.

Figure 3: The Rise of Patanjali



Source: https://economictimes.indiatimes.com/industry/cons-products/fmcg/ patanjali-indian-fmcgs-new-baahubali/articleshow/58523174.cms

Conclusion

Modern era is characterized by high degree of competition. All corporate strategies revolve around fighting competition. Most of the time efforts of the organizations are concerned with fighting competition in existing arena and retaining market share. This red ocean strategy may not be suitable for faster growth and success.

Blue ocean strategy provides great avenues for faster growth and success by helping in exploration of new vistas. The growth of patanjali can be linked to blue ocean strategy.

Patanjali has focused on that part of demography which could not associate themselves with most of the consumer goods companies. Patanjali's combination of low prices, 'natural and pure' proposition and 'swadeshi' positioning are widely acknowledged to be the reasons behind its success. It is surging ahead to take on and beat well- established FMCG players like HUL, Dabur, Godrej Consumer Products, Emami and Marico. Thus blue ocean strategy can be considered as extremely rewarding in this era of cut-throat and ever-increasing competition.

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Strategic Management in the 21st Century -Mckinsey 7S Model

Sandeep Kumar*

Abstract: *Prominent McKinsey & Company consultants Tom Peters and Robert Waterman in their book In Search of Excellence first introduced the 7S management framework in 1982.19 It since has become known as the "McKinsey 7S model" because of its adoption as the management consultancy's trademark management tool. The term 7S refers to the seven elements that are linked together to form the overall framework. In simplistic terms, strategy at all levels is the calculation of objectives, concepts, and resources within acceptable bounds of risk to create more favorable outcomes than might otherwise exist by chance or at the hands of others. Strategic thinking is difficult. It is best viewed as both an art and a science. The framework of theory provides a methodological basis for a disciplined thought process to assist the strategist in developing strategy, and it also serves as a guide for others to follow in comprehending, evaluating, and critiquing the merits of a particular strategy. Strategic planning must be developed within the context of an organization. The McKinsey 7Ss model is one that can be applied to almost any organizational or team effectiveness issue. If something within your organization or team isn't working, chances are there is inconsistency between some of the elements identified by this classic model.*

Introduction

Prominent McKinsey & Company consultants Tom Peters and Robert Waterman in their book In Search of Excellence first introduced the 7S management framework in 1982.19 It since has become known as the "McKinsey 7S model" because of its adoption as the management consultancy's trademark management tool. The term 7S refers to the seven elements that are linked together to form the overall framework. These elements include an organization's (1) strategy, (2) structure, (3) systems, (4) staff, (5) skills, (6) style, and (7) shared values. When looking at it from the top, the framework simulates an interconnected molecule with the shared values at its center and the six other elements forming an interlinked hexagon around it. The main premise of the framework is the total interconnectedness of the seven elements and that management needs to take all elements into account simultaneously, regardless of whether they are hard elements, such as structure, or soft elements, such as style. The ultimate goal is internal organizational alignment.20 The framework can be applied to specific teams, departments, or to the organization as a whole. It is particularly useful for merger or acquisition integration processes.

Hard elements are easier to define and influence than soft elements. Strategy statements, organizational structures, and IT systems are all hard elements. Soft elements, on the other hand, can be more difficult to grasp, are less tangible, and are more affected by organizational culture. They include shared values, skills, style, and staff. According to Peters and Waterman,21 soft elements are as important as hard elements in order to achieve superior performance.

Strategy and structure are self-explanatory; hence they will not be further described here. Systems, in the context of the 7S framework, refer to organizational processes and routines. Style refers to the leadership style of top management. Staff measures the overall quality of employees and their

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general capabilities, whereas skills refer to their actual expert competencies. Shared values represent organizational culture and the general work ethic of the members of an organization. The central positioning of shared values emphasizes that they are directly connected with the functioning of all the other elements.22

The application of the 7S framework is based on a two-step mapping approach. The first step is used for an assessment of the actual configuration of the elements and the second step is used to describe the intended ideal configuration. The 7S framework is helpful in evaluating the wider reaching impact and interrelatedness of change processes in organizations.23

The main limitation of the 7S model is its lack of specific drivers or measurement categories. Although the seven core elements provide a high-level framing and the central notion of shared values connects the soft with the hard elements well, it is difficult to identify the most critical sub elements for each category or to aggregate them into a cohesive measurement. This means, if one category is rather weakly developed, alignment between an existing and an intended model might be presumed but in reality there could still be important elements that are not aligned because they were not considered in the first place. Hence, a detailed case study and very deep insights into the organization and its processes are crucial preliminary requirements for making the application of the 7S model work. This, however, does not happen often and especially not from the inside. Daily tasks and routines take priority over in-depth internal assessment chores. A further concern is that the connection with the external environment of the organization is completely missing from the 7S framework.

STRATEGIC THEORY FOR THE 21st CENTURY

In simplistic terms, strategy at all levels is the calculation of objectives, concepts, and resources within acceptable bounds of risk to create more favorable outcomes than might otherwise exist by chance or at the hands of others. Strategy is defined as “the art and science of developing and employing instruments of national power in a synchronized and integrated fashion to achieve national and/or multinational objectives.” Both of these definitions are useful, but neither fully conveys the role and complexity of strategic thought at the highest levels of the state. At these levels, strategy is the art and science of developing and using the political, economic, social-psychological, and military powers of the state in accordance with policy guidance to create effects that protect or advance national interests relative to other states, actors, or circumstances.

Strategy seeks a synergy and symmetry of objectives, concepts, and resources to increase the probability of policy success and the favorable consequences that follow from that success. It is a process that seeks to apply a degree of rationality and linearity to circumstances that may or may not be either. Strategy accomplishes this by expressing its logic in rational, linear terms—ends, ways, and means. Strategy is far from simple, and understanding a theory of strategy allows us to grasp and work with its complexity by understanding its logic.

A theory of strategy provides essential terminology and definitions, explanations of the underlying assumptions and premises, substantive propositions translated into testable hypotheses, and methods that can be used to test the hypotheses and modify the theory as appropriate. Why study a theory of strategy? Theory’s value lies not in a prescription for success but in how it helps us expand and discipline our thinking. As Clausewitz reminds us, theory should be for study, not doctrine. Theory then becomes a guide to anyone who wants to learn about war from books; it will light his way, ease his progress, training his judgment, and help him to avoid pitfalls. . . . Theory exists so that one need not start afresh each time sorting out the material and plowing through it, but will find it ready to hand and in good order. It is meant to educate the mind of the future commander. A theory of strategy educates the strategist’s mind. It helps discipline our thinking in order to deal with the complexity and volatility of the strategic environment and the changes and continuities, issues, opportunities, and threats inherent to it. It encourages us to rethink our own assumptions and prejudices, but it also encourages us to consider the possible assumptions and prejudices of our adversaries and other actors. Strategic theory opens the mind to all the possibilities and forces at play, prompting us to consider the costs and risks of our decisions and weigh the consequences of those of our adversaries, allies, and others. On another level, theory allows the members of the military profession and the interagency community to communicate intelligently in regard to strategy. It serves as a common frame of reference for the development and evaluation of an appropriate strategy and the communication of it to those who must implement it. A disciplined theory of strategy also allows the professional to evaluate the merits of a particular strategy and critique it in meaningful terms for those who determine policy and make decisions.

Strategic thinking is difficult. It is best viewed as both an art and a science. The framework of theory provides a methodological basis for a disciplined thought process to assist the strategist in developing strategy, and it also serves as a guide for others to follow in comprehending, evaluating, and critiquing the merits of a particular strategy. While theory is an important aid for educating the mind, it is not a substitute for "genius" as described by Clausewitz. History's great strategists possessed "a very highly developed mental aptitude" for both the art and science. They had the ability to perceive the realities and relationships of their environment, and apply them successfully in developing strategy. True genius is rare, and some say that it is no longer applicable in the modern, complex world. It is, they argue, too difficult for a single person—even a genius—to comprehend all the nuances of the modern world, and they propose that strategy is better served by an organizational process. In spite of these views, however, strategies often are linked to individual personalities in the public eye, and some individuals appear to have a particular talent for this art and science.6 It is useful to consider the roles of strategists today.

At the U.S. Army War College, three roles for strategists are considered: leader, practitioner, and theorist. Each of these roles requires a distinct set of skills and competencies. The leader provides the vision, inspiration, organizational skills, direction, and personal impetus necessary to enable others to act in a focused and coherent manner. The practitioner thoroughly comprehends the levels of strategy and their relationships and develops strategy. He translates broad policy guidance into integrated strategies that lead to policy success. The theorist develops theoretical concepts through study and thought and teaches and mentors others. A master of the strategic art is proficient in all three of these areas and may approach Clausewitz's genius.

Strategists function at different levels or in different roles within the state's organizational hierarchy, but they all need to understand comprehensive strategies and communicate them effectively among themselves and to the leadership, the planners, and the people who make up the organizations that ultimately implement strategy. Strategy, then, provides direction for the state, seeking to maximize positive outcomes and minimize negative outcomes, as the state moves through a complex and rapidly changing environment into the future. Strategists thoroughly examine the environment and develop a strategy that identifies objectives, concepts, and resources required to accomplish the goals established by policy. Theory disciplines strategic thinking by explaining strategy's inherent logic; it serves to remind all involved with strategy neither to promise too much nor fail to consider any of the attributes of strategy. A coherent theory also helps leaders, planners, and others to evaluate and execute strategy.

Strategic Planning with the Seven S (7S) Management Framework Framework

Strategic planning must be developed within the context of an organization. The Seven S framework shows how strategy fits into the larger picture, and allows management to consider how the direction of the company will affect all facets of the company.

The Seven S's are Structure, Systems, Strategy, Style, Skills, Staff, and Shared Values. Each element is interrelated with the other elements. Therefore, management must consider how changes to one element will affect all other elements.

The 7-S framework is especially helpful with a process redesign or a change management objective.

Structure: An organization may be structured around customers, products, functions, or other gravitaional centers. Structural elements should be semi-autonomous, yet capable of facilitating interaction amongst one another. (For example, in a functional structure, cross-functional teams will play important roles.)

Strategy: A company's strategy defines the business within the marketplace - staking out a position of strength that can be maintained for years, if not decades. Strategy begins with a theory that provides puts a company's actions into the context of a larger, explainable process. It attempts to correlate cause and effect within a business context, so that action can be evaluated on the basis of expected result.

Style (Culture): Refers to the behaviors, beliefs, and approach that is ingrained within the organization. Some corporations have innovative, risk-taking styles, others are highly conservative. A company's style affects who it does business with (i.e., vendors and partners), as well as who does business with it (i.e., customers). If a company's style clashes with its stated strategy (e.g., a conservative culture claiming a strategy of bold change), style is likely to win the day. With concerted effort, style can be changed. However this requires delicacy and patience.

Staff includes not just the people, but the systems affecting individual and group performance. This includes training, incentives, wages, heirarchy, and intangibles that affect motivation. Although performance reviews and hiring processes are often seen as bureaucratic and unpleasant, they play a vital role in the organization and deserve as much attention as business strategy.

Skills include core compentencies and secondary competencies that are the aggregate of employees' individual skills. Companies may have funcational skills in engineering, R&D, marketing, or managing customer relationships. Skills may be based on employees' knowledge, or may involve utilization of patents, assets, or systems.

Systems consist of processes and procedures that organize the flow of information and operations. Financial systems allocate and control the flow of money into (e.g., from customers) and out of (e.g., to employees and vendors) the company. Operational systems manage the flow and processing of good and services. Marketing and sales tracking systems provide information about products, customers, and sales effectiveness. Each system should have a reporting component that enables management to monitor performance, and provides data with which to make strategic and operational decisions.

Superordinate Goals are unwritten principles that shape behavior. Superordinate Goals are often unwritten, and must be learned based on the behavior and history of the company, rather than what is stated in the company's mission statement.

How is Strategy defined within the 7S Framework?

Strategy is the planning an organisation carries out in order to build and maintain advantage over the competition. Strategic thinking requires a company to respond to changes in the business environment in which it operates.

Having a clear Strategy in place helps companies to future proof their business and manage change.

How does Strategy relate to the other elements of the 7S Framework?

Peters and Waterman's original research began with an examination of the relationship between Strategy and Structure, and the influence they brought to bear on each other. In the 7S Framework, this was expanded to examine how Strategy works alongside Structure and the other "hard" element of this model, Systems, as well as the four "soft" elements: Staff, Skills, Style and Shared Values. For a business Strategy to be successful, it should be aligned across an organisation with the other six factors.

Establishing an effective Strategy

When looking at Strategy, an organisation should evaluate its current approach and how effective it is, and then look at ways of improving it by considering:

- What the objectives of the organisation are and how they might be achieved
- How to handle competition and sustain competitive advantage
- What to do if customer demands fluctuate
- Whether there are any environmental issues that might influence results

Following the principles of McKinsey's 7S Framework, the issues above should not be considered purely from a strategic point of view; they should be analysed alongside the other six elements of the business model, to ensure that all seven elements are in alignment.

A good approach is to:

- Use the 7S Framework to model how the organisation is currently operating
- Review the seven elements and create a model that represents a potential future state, with all of the elements in alignment and working towards a common goal
- Compare the two models and identify the differences
- Create a long-term plan to improve the organisation's Strategy by addressing these differences

Conclusion

The McKinsey 7Ss model is one that can be applied to almost any organizational or team effectiveness issue. If something within your organization or team isn't working, chances are there is inconsistency between some of the elements identified by this classic model. Once these inconsistencies are revealed, you can work to align the internal elements to make sure they are all contributing to the shared goals and values. The process of analyzing where you are right now in terms of these elements is worthwhile in and of itself. But by taking this analysis to the next level and determining the ultimate state for each of the factors, you can really move your organization or team forward. Since the 7S Framework was introduced, it has proved a popular model for businesses across the globe. While many organisations have business plans in place, they can increase their chances of success by developing a Strategy that is in alignment with the other six elements of the 7S Framework.

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Security of Internet of Things of Application & Challenges - A Review

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Abstract: *The IoT (Internet of Things), the following development in the Internet technology (IT), is anticipated to count a huge number of machines on the Internet in the resulting occasional year. Internet of things will empower organizations to utilize these gadgets to gather information about their clients, items and interior activities, and utilize the information for working on existing cycles and making inventive items and administrations. Among the related dangers and difficulties that should be tended to, IoT security is at the primary spot on this rundown. In this paper, we take apart the new researcher and master composing on IoT security. By and large, view that as notwithstanding the way that experts agree IoT security is basic, associations in the IoT space, creators, clients and managerial workplaces are postponed in completing IoT wellbeing endeavors. Our evaluation depicts three basic openings: a shortage of prosperity in current IoT executions, a shortfall of coordinated, unequivocal IoT rules in current IT security principles, and a deficit of IoT rules and rules at the general population and by and large levels. To address these openings, we propose an IoT security structure that components key security necessities in five regions: IoT security levels, IoT security works out, IoT security respect chain, IoT security rules, and IoT security arrangement preparation.*

Keywords: *Security of IoT (Internet of Things), Applications of IoT (Internet of Things), and Challengege of IoT (Internet of Things)*

Introduction

The Internet of things affects guidance, business, science, and innovation, society, government, correspondence, and so forth. The Internet is one of the fundamental elements and very signs in all of the mankind set foundations and with the possibility of the Internet of things (IoT). The web turns out to be better to have a savvy life in everybody rise [1]. IoT is once more additional advancement in Internet access. Through the web on the IoT, objects see themselves and secure an understanding of behavior by making or enabling related decisions in the way that they can bestow information about themselves. These things can get to data that has been accumulated by different things, or they can add to various organizations. Figure 1 shows that with the IoT, anything we will ready to analyze to the web whenever from any spot to offer any sorts of help by any relationship to anybody [1].Internet of Things is an improvement that assembles a broad assortment of shrewd frameworks, structures, and savvy gadgets and sensors. Additionally, it takes advantage of quantum and nanotechnology concerning limit, recognizing, and dealing with speed which was unrealistic quite a bit early [2]. Expansive assessment studies have been finished and are available with respect to sensible articles, and press statements both on the web and as contained words to describe the probable suitability and applicability of the IoT changes. It is potency to be operated as a primer work before creating novels

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inventive field-tried methodologies while evaluating safety affirmation, and interoperability.

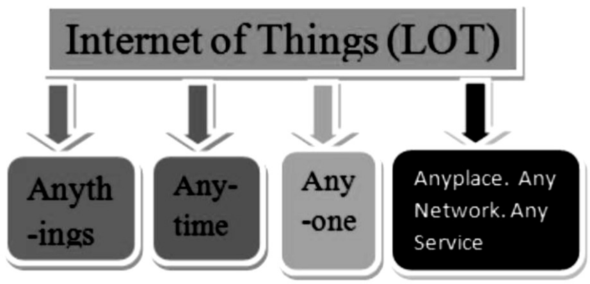

Fig.1 *IoT Concepts*

Changes in our lives can be seen with the invention of IoT gadgets. It gives us idea of the Smart Home Systems (SHS) and machines, robotization frameworks for homes, and solid energy observation frameworks [3]. Another important accomplishment of the Internet of Things (IoT) is the Smarts Health Sensing systems (SHSS). The Smarts Health Sensing systems (SHSS) consolidate undersized smart hardware and gadgets to help the well-being of individuals. These devices can be operated both the inside and outside to check and notice the further clinical issues and prosperity levels or the integer of calories swallowed in the well-being neighbourhood. The idea is to make another sort of utilization that can include smarts homes and brilliant cities; too numerous administrations suppliers like notices, security & privacy, energy-saving, communication, computers, and entertainment.The purpose of this paper publishing the Security of Internet of Things of Application & Challenges - A Review.

2. Literature work

In this section, the IoT (Internet of Things) includes the multidisciplinary notion to the give it's satisfaction to a few spaces like genuine, contemporary, transportation, public/private, clinical, and so ahead. Further investigators have figured out the IoT, particularly concerning expressing interests and viewpoints. The prospect and ability of IoT ought to be noticeable in a couple of utilization regions. Different critical IoT projects have taken on obligation over the demand in latest two or three years. A part of the enormous IoT undertakings that have gotten most of the demand is shown in Fig. 2. In Fig. 2, a comprehensive circulation of these IoT assignments is shown among the USA (American), UN (European), and the Asia/Pacific districts. It might be seen that the USA (American) central area is offering more in the clinical consideration and quick creation network projects however the responsibility of the European body of land is more on the savvy the metropolis projects [8].

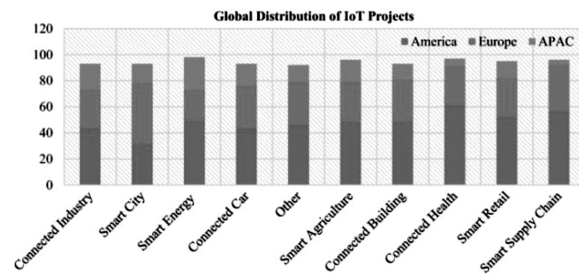

Fig. 2 *the Global distribution of Internet of Things projects amongst different countries*

Fig. 3 outlines the overall piece of the pie of Internet of Things projects overall [4]. It is obvious that industry, shrewd city, smarts energy, and savvy the vehicle-based Internet of Things projects have the greatest piece of the pie in contrast with others.

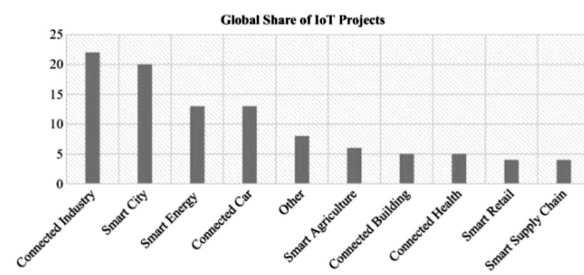

Fig.3 *The Global share of Internet of Things assignments across the world*

Smart cities understand smart home as well. The brilliant home comprises of Internet of Things-empowered home gadgets, cooling/warming frameworks, TV, sound/video web based instruments, security frameworks, and so forth, those intercommunicate independently further to give the best solace, security, and diminished energy utilization. This transmission happens through the Internet of Things-based focal control units utilizing the Internet. The idea of a smarts city succeeded notoriety somewhat recently and tempted a ton of exploration practices [5]. The smarts home business economy will cross the 100 billion bucks by 2022 [6]. A canny home doesn't simply give in-house comfort yet, moreover, assists the house owner in cost-cutting in a couple of viewpoints for instance with lowing energy usage will result in almost lower power bills. Other than splendid homes, another grouping that gravitates toward the adroit city is smart vehicles. Momentum vehicles are equipped with the sharp widgets and sensors that handle by outlying most of the features from the headlights of the vehicles to the engine [7].The Internet of Things is centered around cultivating one more clever vehicle structure that wires distant correspondence between vehicle to vehicle and vehicle to the driver to guarantee perceptive upkeep with a pleasing and secure driving understanding [8].

Khajenasiri et al. [9] played out a survey on the Internet of Things deals with serious consequences regarding splendid the energy control to help savvy the city applications. They communicated that the present Internet of Things has passed in identical infrequent application scopes to nurse the development and people. The degree of the Internet of Things is especially wides and not really far off future the Internet of Things can get basically all application areas. They referred to that significance conservancy is one of the huge pieces of the overall population and the Internet of Things can assist with cultivating a smart significance control system that will save both significance and money. They depicted Internet of Things engineering concerning savvy city idea.

Alavi et al. [10] tended to the urbanization issue in the urban communities.The advancement of social classes from natural to metropolitan environment achieving creating people of the metropolitan networks. Along these lines, there is a need to offer keen responses for flexibility, energy, clinical benefits and establishment. Smarts city is one of the huge application locales for Internet of Things engineers. It explores a couple of issues like traffic the chiefs, air quality organization, public security plans, sharp halting, keen lightning and splendid waste. They referred to that IoT is trying to deal with these troublesome issues. The prerequisite for additional created astute city establishment with creating urbanization has opened the entrances for financial specialists in the field of smart city developments. The makers surmised that IoT engaged development is essential for the development of reasonable savvy urban communities.

Afterward, Heer et al. [12] idea about a security issue in IP based IoT framework. They saw that the web is the spine for the contact among instruments that spot in an Internet of Things system. As necessary, security issues in IP-based internet of Things structures are a critical reference. The security designing is arranged considering the presence cycle and limits of any article in the Internet of Things structure. It moreover consolidates the consideration of the trusted in untouchable and the security shows. The survey raised that IoT prompted a superior methodology for correspondence among a couple of things across The affiliation thusly the same old starting to quit internet display can not provide the ordinary help for this correspondence. In this manner, new shows ought to be arranged considering the translations at the entries to ensure beginning to end security. Checks and access control are various issues in IoT that need a promising response for support security

3. INTERNETS OF THINGS APPLICATION

Smart Cities

Many significant urban communities were upheld by brilliant undertakings, similar to Seoul, Tokyo, Shanghai, New York, Amsterdam, Singapore, and Dubai. Shrewd urban communities might in any case be seen as a city representing things to come and savvy life, and by the shift pace of building brilliant urban communities today, it will turn out to be entirely doable to open the IoT innovation in urban areas improvement. Shrewd urban communities needs require cautious preparation at each stage, with the solace of arrangement from states, and residents to carry out the web of things innovation in each part of advancement. With the IoT, towns can be created on many levels, by further developing framework, escalating public transportation diminishing traffic blockage, and guarding residents, sound, and more engaged with the local area. By association, all frameworks in the urban communities, for example, medical care frameworks, transportation frameworks weather conditions observing frameworks and so on. The expansion to assist with peopling by the web in each spot to getting to the data set of rail routes, air terminals, and transportation following working under assigned conventions, urban areas have become smarts through the IoT(Internet of things).

Smart Home and Buildings

Wi-Fi's innovations in-house self-guideline has been utilized basically because of the organization idea of utilized hardware where Wi-Fi typically upholds electronic gadgets like cell phones, TVs, and so on. Wi-Fi is starting to grow to be critical for the house IP community due to the growing tempo of reception of transportable processing devices like phones, tablets, smart watches, and so on for instance, systems administration to give the organization or web-based real time features at home to control the gadget usefulness over all the organization. Simultaneously, cell phones guarantee that shoppers approach a compact 'regulator' for the gadgets associated with the organization. Most organizations are considering creating stages that coordinate structure motorization with amusement, energy observing, medical services checking, and remote sensor checking in the home and building conditions. Remote sensor organizations (WSNs) with joining to the web of things innovation will give clever energy the board in structures, also, too clear financial and ecological additions.

Smart Energy and the Smart Grid

The smart grid is connected to the information and power and materialized to have smart power management. A smart grid that merges the data and information technologies (ICTs) to the power organization will empower an on-going, two-way collaboration among providers and purchasers, making more unique connections on the energy stream, which will assist with conveying power all the more proficiently and economically. Numerous applications can be dealt with because of IoT for shrewd lattices, like modern, sun oriented power, atomic power, vehicles, medical clinics and urban areas power control, empowered by the IoT (internet of things) essentially in smart grid aspect.

Telehealth

Telehealth, or Telemedicine, hasn't totally prospered at this point. But, it has great possibilities Internet of Things Examples of Telemedicine consolidates the high-level correspondence of Medical Imaging, Video Talks with Specialists, Remote Medical Diagnosis and Evaluations, etc.

Self-driven Cars

We've visible an first rate association of self-propelled automobiles. Google attempted it out, Tesla tried it, or even Uber idea approximately a model of self-driven automobiles that it later racked. Since living spirits on the roads we're making due, we truly need to ensure the advancement has all things needed to ensure better security for the voyager and those in the city. The vehicles utilize two or three sensors and installed frameworks connected with the Cloud and the web through machine learning. In any case it will require a few extra years for the progression to develop totally and for nations to change rules and frameworks, how the circumstance is playing out right at this point is perhaps the best use of IoT.

Traffic Management

Vehicle traffic the board in huge urban areas can be enormously improved with the assistance of the Internet of Things (IoT). The Internet of Things assists us with remaining informed and further develops traffic observing by permitting us to involve our cell phones have sensors to get information from the vehicles through different applications. This feeds and works on the information on the different courses to a similar objective, distance, and assessed appearance time. Examination of traffic designs over a significant stretch is another IoT application.. Residents will be more prepared to avoid traffic and deferments by being made aware of likely different choices.

4. INTERNET OF THINGS CHALLENGES

The IoT (Internet of Things) preserves up with a quick modification to be the part of how people's lives communicate. all over the globe, web-empowered appliances are changing our worldwide sovereignty into a more monumental turned-on region to live on. There are various sorts of difficulties in Security, Design, and Deployment before IoT.

Lack of encryption:

These drives like the storing and taking care of limitations that would be tracked down on a regular PC. The result is a development in attacks where software engineers can perfectly control the assessments that were expected for safety.

Insufficient testing and updating:

With the development in the amount of IoT (Internet of things) contraptions, IoT producers are have the need to produce their devices as fast as potential without providing safety. Most of the appliances and IoT developments do not get sufficiently experimenting & updated, and stand prone to hackers and other safety problems.

Brute forcing and the threat of default passwords: Delicate certificate and login subtleties depart almost all IoT devices powerless against hacking. Any business that utilizes manufactory defaulting confirmations on their gadgets is setting both their business and its resources and the client and their significant data in danger of being powerless to a beast force assault.

IoT Malware and ransom ware:

Produce product utilizes encryption to latch out consumers from miscellaneous machines and stages nevertheless utilize a consumer's beneficial information and data basically.

Model - A programmer can commandeer a PC camera and take pictures. By utilizing malware courses, the programmers can request proceeds to open the device and produce the information.

Increased cost and time to market:

Embedded systems are forced by cost. The requirements starts to motivate better methods while planning the IoT gadgets to deal with the expense demonstrating or cost ideally with advanced electronic parts. Fashioners additionally need to take care of the plan time issue and bring the inserted gadget with flawless timing to the market.

Security of the system:

These procedures must be formulated and executed to be vigorous and dependable and must be unassailable with the cryptographic computations and safety methods. It soft-soaps multifarious manners to deal with the secure every one of the features of inserted frameworks from model to the arrangement.

Connectivity:

It is the preeminent worry while associating gadgets, applications, and cloud stages. Interconnected gadgets that convey help toward the front and information are incredibly important. While unfortunate network develops into a test where the Internet of things (IoT) sensors are expected to screen process information and supply data.

Cross platform capability:

The Internet of Things (IoT) applications must originate, maintaining in psyche the technical changes of the future. Its progress requires harmony among gear and programming limits. It is challenging for IoT application architects to assure that the device and IoT stage motorists the best display despite significant contraption rates and decorations [2].

Data collection and processing:

In the Internet of Things (IoT) development, information reproduce a then significant job. What is more essential here is the taking care of or comfort of taken care of data. Close by security and assurance, headway bunches need to ensure that they plan well for how data is accumulated, set aside, or processed within an environment.

Data interpretation:

Support the utilization of smarts things. There is a need to decipher the not set in stone by IoT sensors as precisely as plausible. For specialist co-ops to benefit from the different information is the created, they should be able to reach a few summed up capable inferences from the deciphered sensor data [13].

Wireless communications:

From power effectiveness of view, laid out remote advancements like the UMTS, Wi-Fi, GSM, and Bluetooth are undeniably less appropriate; later WPAN guidelines, for example, ZigBee others still being worked on may have a smaller transmission capacity, yet they really do utilize altogether not as much as power.

Lack of skill set:

The development demanding situations above need to be all added care of assuming there may be valid talented help appearing at the IoT utility progress. The right capability will continuously get you past the focal tribulations and will be the significant IoT application advancement aid.

5. CONCLUSIONS

Flow Research has embraced one of the infrequent significant processes while tending to the IoT safety issue. The essential method is intercommunicating that IoT has endless potential, yet moreover has a tandem of the extra risks - one of which is protection. These creators virtually express that IoT safety is an issue, and state stimulations pushing why is the including bargain extortion, data breaks, and hackings. The completion of these papers is usually a wellspring of provocation that states creators need to consider safety while inventing new things that will be supposed to discourse endangering safeness's concerns. Last but not least, there is an emerging organizational point that looks at how and why states should cultivate IoT safety rules. Our estimation suggests that there are three huge openings in the each, and every one of these areas:

- The deficiency of security& privacy in contemporary Internet of things (IoT) executions,
- The deficiency of details, specific Internet of things (IoT) approach in present IT security standard,
- The deficiency of Internet of things (IoT) laws and regulations at the various countries in the international levels.

As a rule, we view that notwithstanding reality that specialists concur IoT security is essential, relationships in the IoT space, organizers working for these affiliations, clients of their IoT strategies, and administrative affiliations are deferring doing IoT prosperity tries. To address these openings, we propose an IoT security structure that parts key security necessities in five locale: security levels, security works out, security respect chain, security principles, and security preparing. The future academic assessment can impel how we could decipher the openings perceived in this paper, the specific, money related, and gathering blocks for IoT security practices, and the challenges of making and taking on security rules. We are presently dissecting a part of these issues in continuous examination.

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A Study of Harvard Framework for HRM

Sweta Bakshi*

Abstract: *The Harvard framework for HRM is an HR model that takes a more holistic approach to HR, including different levels of outcome. This model comprises of several situational factors, interests of the stakeholders, a long-term approach and feedback process. There are various modifications done in the Harvard model from time to time to adapt to the changing environment. This model explains that all organizations will record achievements in organizations performance provided they identify, gain commitment to and also assumes that if HR put in place a set of human resource management practice e.g. reward practice. While the Harvard model of HRM has often been lauded as influential and important, no model is perfect. This model meets all stakeholders' interests, this will result in long-term utopian working practices that meet individuals', society's and the organisation's long-term goals.*

Introduction

The Harvard framework for HRM is an HR model that takes a more holistic approach to HR, including different levels of outcome. One of the most significant assignments that include the staff division in an association is human resources management (HRM). An organization is just prone to accomplish its goals if their representatives are utilized successfully. Simultaneously, arranging how best to utilize human resources will assist an association with achieving its targets and objectives. Human resources management has vital ramifications. It implies continually searching for better methods for utilizing representatives to profit the association. The Harvard Model for HRM is one of the most significant HR models. It is based on the work of Paauwe and Richardson (1997) and creates a nuance on the models above in regards to how HR operates.

The Harvard framework for human resource management (1992)

Boxall and Beer from Harvard proposed the Harvard Framework of Human Resource Management in 1992 (Beer, Boselie, & Brewster, 2015). They believed in the combination of systems as bureaucrats, markets and clan approach. This can remove the limitations of a single model and hence increase efficiency, innovativeness, and reliability towards the organization's strategies (O'Riordan, 2017). This model includes the global development of businesses, the power of different stakeholders like government, labor union, management, and link corporates with human resource strategies (Poole, 2015). Hence in the globalized world, where economies are fluctuating, technologies are advancing, and customer demands are changing, organizations are forced to adopt the Harvard model on a practical basis.

This model comprises of several situational factors, interests of the stakeholders, a long-term approach and feedback process. There are various modifications done in the Harvard model from time to time to adapt to the changing environment. Their main objective is to resolve the problem of historical personnel management of traditional and routine functions (Campbell, 2003). Harvard model uses modern techniques and strategic functions. But the limitation of the model is that it ignores the hard HRM approach which shows that there is a high chance of business failures (Brunetto, Farr-Wharton, & Shacklock, 2011).

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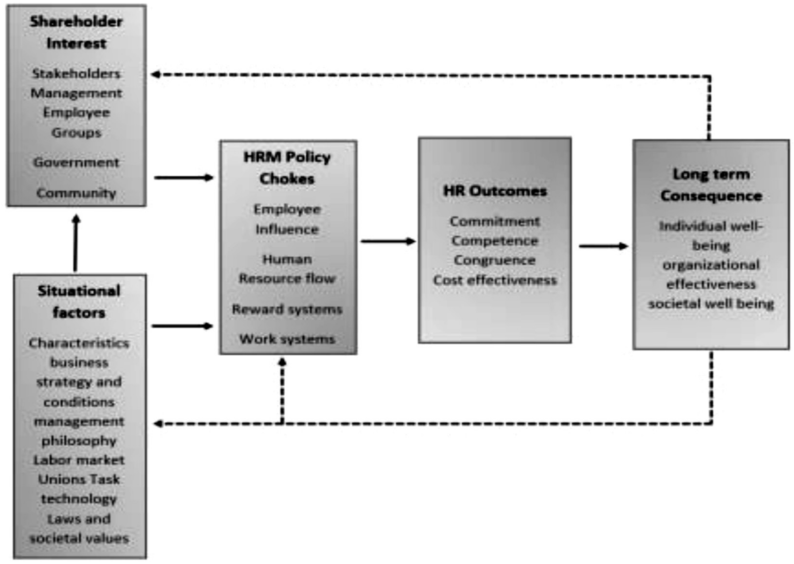

The Harvard model for HRM is an HR strategy model comprised of five components:

1. The model starts, on the left, with stakeholder interest. These stakeholders include shareholders, management, employee groups, government, and more. These interests define the model of HRM policies.
2. At the same time, situational factors influence these interests. Situational factors include workforce characteristics, unions, and all the other factors that were also listed in the8-box model.
3. Situational factors and stakeholder interest influence HRM policies. These include the core HR activities, like recruitment, training, and reward systems.
4. When done well, strategic HRM policies lead to positive HRM outcomes. These include retention, cost-effectiveness, commitment, and competence.
5. These positive HRM outcomes lead to long-term consequences. These can be individual, organizational, and societal.

Strategic human resource management (SHRM) can be defined as a way of deciding on the plans and intentions of an organization looking at the relationship between employment and the following human resource management processes and procedures within an organization – development, recruitment, training, benefit and employee relations plans, performance management, strategies and procedures.

It's an approach to human resource management that has the goal of using people most wisely with respect to the strategic needs of the organization. It is strategic way of managing the organization's most valued properties: the employees are individually and jointly contributing to the success and achievement of the organization's objectives. There are several models and theories of strategic human resource management.

Among these are best practice model and contingency model identified by Hope-Hailey et al (1998). According to Michael Armstrong in his book titled 'A handbook of Human Resource Management Practice'. Best practice model of strategic human resource management otherwise known as outcome model is a model that emphasize commitment rather than compliance and advocates processes of culture management to achieve cultural control of an organization. It is universalist approach.

This model explains that all organizations will record achievements in organizations performance provided they identify, gain commitment to and put in place a set of human resource management practice e.g. reward practice. (Guest, 1997) said and I quote, 'In this model, 'high commitment' aspect binds with human capital, because it must have a very good high level of commitment, put in place by the 'ideal set of practices".

This means that the best set of human resource practices have to be put in place for the improvement of work output and well-being of human capital, place priority on how human capital can be motivated, and an idea to accomplish the organization's goals while contingency model concentrates on the achievement of fit between organizations /businesses and human resource strategies.

It is a situation where definition of organizations aims, policies and strategies, lists of activities, and breaking down of roles of the department of human resource are updated and only if they are similar to the circumstances of the organization.

It is essentially about the need to achieve fit between what the organization is and wants to become (its strategy, culture, goals, technology, the people it employs and its external environment) and what the organization does (how it is structured, and the processes procedures, and practices it puts into effect).

Human resource management entails developing an organization that caters for all the activities it requires.

Harvard Model of HRM: Strengths & Weaknesses

While the Harvard model of HRM has often been lauded as influential and important, no model is perfect. It does have its strengths and weaknesses, as we explain below.

Notable Strengths

The Harvard HRM model has been commended because it helps HR leaders and strategists see HRM in a broader context. By considering the balance between employees, operations and management, the model offers a robust framework to underpin effective HR work.

Acknowledging that employees are active, rather than passive, agents and play a vital role in the organisation's success or failure.

Helping attempt to balance multiple stakeholders' needs. For example, the model's creators emphasise the need for trade-offs but also remind us that, to be effective, HR strategy cannot be considered in isolation.

Reminding us that any HR strategy contains many moving parts while balancing the input of many interested parties.

Encouraging line managers to take more responsibility for employees rather than delegating to HR.

Helping HR leaders identify what is within or beyond their control. In addition, separating internal and external factors to set strategic HR within a real-world context.

Identifying the impact that seemingly unrelated decisions and actions can play on HR policies and the entire business.

Weaknesses

The Harvard HRM model's strength (its all-encompassing breadth of scope) can be overwhelming and hard to translate into reality. The authors focused on how to create an ideal model – not how to execute it. This is its biggest weakness.

This model also assumes that if HR meets all stakeholders' interests, this will result in long-term utopian working practices that meet individuals', society's and the organisation's long-term goals. Unfortunately, while this is a noble and logical goal, the reality is often far different.

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Onboarding Process: A way to reduce the Attrition Rate

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Abstract: *The employees are the backbone of any organization their performance has an impact on the metrics of the organizational performance. Recently it has been observed high attrition rate in the organizations. The survey depicted that many employees turnover is due to unmet expectation and lack of clarity in duties and responsibilities, poor training, which makes the employee frustrated and they leave the organization within four to six months. To put a halt to this pattern, it is to time enhance moral of the employee and make the workplace environment and culture appealing and supportive to the new joiners. The onboarding process can give prospective employees a glimpse into company culture and shape their perception of their future workplace during this critical time. A good impression fosters a willingness to stain the organization for a longer period of time.*

Keywords: *Onboarding, Performance, Attrition, Organizational Culture*

Introduction

The onboarding process is also known as an organizational socialization, it is a process in which the new employee is introduced to a new organizational culture, rule regulations, Policies and many more parameter for effective performance. The higher the onboarding experience the lower the turnover intention and vice versa. Effective onboarding procedures should help new employees become familiar and comfortable with their new working environment, but they should also provide all the tools and information that workers will need to perform their job efficiently.

Onboarding is the process which helps the new employees to be acquainted to the culture of the new joined company and make them more comfortable in policies and environment of the organization which helps to clear their role ambiguity's and enhance their productivity. There is a positive and significant correlation between self-efficacy and turnover intention which is mediated by orientation experience.

New hire retention is increased by 50% when employees go through a proper onboarding procedure. Studies show that employees with a positive onboarding experience are more likely to stay with a company for at least three years. Some major points while designing the onboarding procedure is given below:

The following are all part of the onboarding process:

- Human Resources processing
- Orientation
- Introducing the Team and the Work Culture
- New Employee Training and Shadowing
- Defining the Roles and Responsibilities of the New Hire
- Introducing the Clients (Caseload) or Management Team
- Diversity Training

Objectives of the study

The objectives of the study are:

1. To discuss the concept of onboarding process
2. To study steps involved in the onboarding process

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3. To discuss about the essential documents for the onboarding process
4. To discuss about the impact of effective onboarding process to the employee

Research methodology

This research is a descriptive study. In this article detailed aspects of onboarding and its relevance is described. This research article is based on secondary data. The main sources of secondary data are various websites, magazines, journals and newspaper. In this research we tried to discuss the importance, need and essential documents for effective onboarding process.

The Four Steps of Onboarding Process

In a competitive world, organizations need to frame more polices to attract the quality and attracted employees. The onboarding strategy is one of the key strategy for retaining the quality and productive employees in the organization. Onboarding is the crucial step in creating the first impression in the mind of the new hires. The onboarding process helps the new employees to have an in depth understanding of the organization's culture and values.

There are basically four crucial steps of onboarding process which play a vital role in engaging candidates in the job profile, improving the retention rate, make them acquainted with new culture and values of the organization

Step 1: Pre-onboarding

The presocialization process is the first stage of onboarding. This stage exists before the new candidate enters into the organization. It starts as soon as new candidate accepts the offer letter and waits for the date of joining. In preboarding process, the organization can inform to the employees, either personally or email. The old employees should be informed about the job profile of an employees, background and experience and encourage other employees to welcome them. When employees are aware of a new staff member ahead of time, they can be prepared to help them from the first day of the joining.

During the pre-onboarding phase, the HR has to be very cooperative and friendly with the new joiners so that the person gets an enough time to fulfill all the exit formalities from their previous organization. If they are relocating, HR Department should check if they need any help in finding a place to live. You could also send them a video or document that gives a brief idea about how your organization works and what their first day will look like.

Make the New Employees workstation ready

The HR department makes sure that all the tools needed for the job by the candidate is arranged prior to his/her joining. Setting up the new employee's computer, email and phone numbers ahead of time, and providing any necessary office supplies, can help a new colleague feel valued from day one. This helps the new employee to perform at their best.

Allow new employee to access the necessary programs

Along with getting their workstation ready, allow the new employee to access to any programs, software or electronic files which they need for the proper functioning of the work.

Phase 2: Welcoming new hires

The second step of onboarding is related to welcoming new hires to your organization and acquainting him with organizational culture, environment and HR policies through orientation program. The period of orientation program vary from organization to organization, so it is better to restrict this phase to less than a week. The orientation to give them a clear picture of your organization before they begin their work.

Keep the first day as simple as possible. During orientation inform the employees with organizational culture and acquaint them how your work practices are aligned with this culture. During the orientation program inform him about leave policies, superiors, working procedures time off, attendance, medical insurance, payroll policies, organizational infrastructure like parking lots, cafeterias and medical facilities. Introduce the new hires to their teammates and other important associates.

Phase 3: Role-specific training

Role specific training aims at training new employees on their day-to-day job responsibilities and prepares them for long-term success and survival in this competitive world. Employees can carry out the primary functions of their work with greater confidence once they understand what they need to do. Without formal training the new employee may have certain role ambiguity which hampers the productivity of a person as a result, they may develop a feeling of dissatisfaction, which can lead to a high turnover rate. On the other hand, a welldrafted new hire training plan will help employees feel welcome by showing that you care about their development.

As an initial step to training employees familiarize themselves with the organizational Learning Management. For effective skill training different techniques like blended learning, self-paced learning, micro learning, and more, the person can select with which he is comfortable. The onboarding learning materials should be stored safely in a place from where the employees can access and can refer back at the time of need.

Phase 4: Easing the transition to their new role

The transition period, which normally takes place from 60-120 days after the first stage, is the third stage. In this period, the new hire is moving to their permanent employment and their direct supervisor is their primary source of development and support. In this stage the new employee gets acquainted with rules, regulation and functional process of the organization and moves to the mode of functional duties and responsibilities. For effective transition a mentor from the employee's department can help them to better understand the job and department. The manager should set up clear expectations to the new employees so that they know their responsibilities and accountability. Set up the smart goals to help them to understand and visualize the success, quality and productivity of the work.

Once the employee is settled to the organization, than avail this opportunity to take the feedback from the employees regarding company's onboarding process. As a manager try to find out what they liked and didn't like about your process and make changes as you see fit.

Thus we can say that onboarding is a very crucial part of an organization which helps to manage new hires to adapt the new organizational culture, values, and work. If onboarding is not done in an effective manner than, the organization might face the high turnover of new hires, and the time, effort, and energy spent in the recruitment plan might go in vain so it is very important for the organization to work on the effective onboarding process.

Supporting Documents for Onboarding

When the new hire joins the organization, it is the time has long and healthy relationship with the new joinees. The organization should have a uniform set of procedures to get a new employee on board. The following documents will help to ease and to smoothen the process of onboarding an employee.

i. Appointment Letter

The first and most important thing is to provide the employee his/her appointment letter which will serve as proof for the employees regarding the joining date and start of service in the company, The appointment letter consists of the terms of hire, the role and responsibility of the employee and the expectations of the employer. The issuance of appointment letter will ensure familiarization of the duties, responsibilities and other terms of working conditions to both employer and employee.

ii. Confidentiality Agreements

The next important document is a confidentiality or non-disclosure agreement. This agreement forbids the employee from disclosing any confidential or important business information to a third party. It should be sign by the employee on the first day of his/her joining.

iii. Compliance forms:

On the first day, complete the necessary work paperwork related to ESIC Forms or Provident Fund Form and gratuity nomination form from the employee. The Completion of the necessary work indicates the employee that he has joined some professional and organized organization.

iv. Opening of Salary Account

The opening of salary account is the most important formality from the employee's point of view; remuneration is the great motivation for best performance for an employee. The process of opening salary account should be completed in the first week or before the employee's first pay day and in case it could not be open, than the best practice is to make the payment through cheque.

v. Welcome Kit

The welcome kit is given to the employee as he is allotted the workstation. It is the way of welcoming the new employee to the organization. A welcome kit usually consists of a notebook and basic stationery that an employee might need during his tenure in the company like pen, pencils, stapler, punching machine, pages, pinboard pins and other essential resources

vi. Welcome Guidance E-mail

Once the employee has joined the organization, a welcome mail has to be sent by the HR manager or the reporting manager which will enhance the positive experience of employee towards the onboarding process by making them familiar towards the organization environment. The employee feels more welcomed and happy. A gesture of sending the welcome mail to the new employee will enhance the confidence and develop a positive attitude towards the organization

vii. HR email regarding documents and process:

The last step of onboarding process is to send the email from HR regarding the attendance, leaves as well as HR Policies and HR norms like dress code, office timing tec. If in the organization any specific leave format is there, it should also be shared to the employee.

Every organization has a list of holidays which is common for all the employees. Make sure that all the employees are informed about these public holidays. Many organizations are using the HRIS which can confusing to the new employee. The HR department should train employee about how to register and use the HRIS effectively.

Conclusion

The successful onboarding is the key for retention and talent management. Onboarding helps the new employees to understand their role, the company philosophies, culture and what the wants to offer them. According to Peterson, "Onboarding is not a single event. It is an ongoing Strategy". Many organizations believes that onboarding process end when all paperwork of new joinee is over at the first day of the new employee but in reality it is beginning. How effectively and efficiently the HR handles the few months' queries and experiences of the new employee, this is the critical period of any new employee life cycle which plays a crucial in the commitment of the employee. According to various HR experts onboarding process is a strategic process and continues for one year to ensure high retention and talent management. Thus we can say none organization wants to lose talented employee, it is very painful for them. The proper implementation of onboarding process can enhance retention rates by 25%. Therefore, organizations should consider adopting these four phases of employee onboarding to ensure high retention rate.

The recruitment process involves high cost to the organization; the business leaders must understand the importance of onboarding and effectively integrate the new hires in the organization to ensure their success. For the successful implementation of onboarding process, the business leaders should work on the effectiveness of the onboarding process, simply writing down the steps of onboarding process will not help the employees to retain and succeed but effective implementation is utmost required. The effective onboarding will result in a faster learning curve for new hiring, improved and effective communication and a more productive and engaged workforce. Thus we can say that onboarding process is a systematic process to socialize the new employee with company's policies, procedure, tools information's, and its culture to become a productive and committed employee of the organization Organizations that are able to leverage the power of connection during onboarding by specifically Identifying answers to the who, what, when, and where for connecting established and new employees benefit in a variety of ways, including enhanced new employee performance, higher job attitudes such as satisfaction and commitment, and decreased turnover Onboarding is the key to getting new employees up and running both quickly and smoothly.

Organizations those are able to leverage the power of connection during onboarding by specifically identifying answers to the who, what, when, and where for connecting established and new employees benefit in a variety of ways, including enhanced new employee performance, higher job attitudes such as satisfaction and commitment, and decreased turnover Onboarding is the key to getting new employees up and running both quickly and smoothly.

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Group Insolvency Regime in India: Challenges and Developments

CS Shefali Sethi*

Anand Sharma**

Abstract: *Large enterprises today operate through a network of businesses known as group companies, which creates connections from an economic, social, and financial standpoint. However, when a group's holding company incurs debt, it has a significant impact on all of the tiered companies within the group. India currently lacks a method to reorganise a group that has gone insolvent as a whole, but the courts are attempting to fill this gap with judicial judgments. Additionally, a Working Group on Group Insolvency was established, and it offered advice on how to handle group insolvency. This paper addresses the most relevant subject in the tropical area of Insolvency law which is group Insolvency. It analyses the issues and challenges of group insolvency in India as well as examines the recent developments in the field of group insolvency. It suggests that given the many benefits the concept of group insolvency offers, it is essential that Parliament acknowledge group insolvency by modifying the IBC to promote uniformity and confidence in the legislation. There are some loopholes in the working group recommendations that need to be addressed and it should draw inspiration from other Asian countries as well in order to bring evenness in the law.*

Key Words: *Group, Insolvency,Bankruptcy*

Introduction

A group company is a collection of firms that are linked by a common control structure or economic relationships. According to research findings, most of the businesses in India are linked with one another and work as one business unit[1]. In accordance with the World Bank report, India placed 20th out of 190 countries on the related party transaction index[2]. Although accounting standards and stock market authorities have moved on to the notion of "business groups," the shadow of the 19th century judgement in Salomon v. Salomon & Co which considers a company as separate legal entity lingers over corporation law and, as a result on insolvency law as well. According to an International analysis of India's greatest insolvencies published in 2018, the bulk of the country's insolvent firms are conglomerates controlled by promoter groups[3]. 'Group insolvency' is basically a process of combining a company's tangible and intangible property and conducting insolvency procedures of its affiliates together. Presently, The Insolvency & Bankruptcy Code does not include a framework for combining corporate insolvency resolution and group company liquidation proceedings. Regardless of the level of interwoven structures and common resources, the insolvent entity is treated as a distinct and narrowly defined matter, and the group companies stand sheltered. There appears to be no line of case laws on substantive consolidation in India., although "lifting of the corporate veil" has long been a popular option in various precedents in the courts. The significance of a group-focused insolvency approach is currently being debated in

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a variety of contexts, ranging from academia to international policy organisations like UNCITRAL to domestic legislators. It is a crucial idea that must be researched and put into practise in India in order to resolve the hundreds of cases that are pending in bankruptcy courts. This paper explores the need for group insolvency law as well as examines the challenges faced in its implementation and examines the recent developments in Insolvency and Bankruptcy Code pertaining to group insolvency.

Literature Review

Historically, the most effective means to resolve creditors' claims has been through the employment of insolvency law. A court keeps assets together to maintain and increase their worthwhile monitoring how they are used and disposed of[4]. Insolvency legislation has mostly remained macroprudential or single entity-focused for a long time (and possibly still), leading to the treatment of enterprise group members in financial difficulties on an entity-by-entity basis. Modern bankruptcy law does, however, acknowledge that the individual insolvency method often results in the loss of group coordination, group decentralisation, and less favourable results for stakeholders[5]. Unfortunately, any hard and soft law has been yet recognised or addressed the issue of business group insolvency. Infact, there are no provisions in the UNCITRAL Model Law on Cross-Border Insolvency[6], the Directive on the reorganisation and winding up of credit institutions (CIWUD), or the original European Insolvency Regulation (EIR 2000).

Business group insolvency is likewise governed by a variety of country law systems. For instance, Germany consolidates bankruptcy procedures under a single court, appoints the same bankruptcy practitioner to several bankruptcy proceedings, and initiates special group coordination proceedings[7]. Similarly, the general insolvency regulations of Spain, France, Belgium, and Italy have been changed drastically to help in starting the resolutions of all group companies together[8]. In UK the insolvency system is being widely used to restructure the debts of multiple group members simultaneously, resulting in a solution for the entire group[9]. The Austrian Insolvency Law does not recognise the idea of "Group Insolvency"; rather, each legal organisation is to be evaluated separately. Whereas in Canada the development of case law produced a three-factor test to determine whether consolidation would be the best course of action or not. However, on March 9, 2017, the German parliament added the idea of group insolvency to the German insolvency law. According to German insolvency legislation, insolvency cases involving businesses that are part of a corporate group may be documented with a single insolvency court and taken care of by a single insolvency administrator.

The bankruptcy of BCCI in the early 1990s was one of the first catalysts for developing a coordinated, international, group-focused strategy. While BCCI did business in 70 different countries, its headquarters were in Luxembourg. The UK court ordered the liquidator's request to combine the assets of the Luxembourg business with those of BCCI Overseas(www.bis.org). Another instance included Maxwell Communications, a company with assets spread across multiple nations, whose chief executive vanished in an accident and left the organisation without direction. A joint examiner and administrator were appointed by US and UK courts to combine assets across jurisdictions.[10]

Objectives

1. To analyse the issues and challenges of group insolvency in India.
2. To examine recent developments in Insolvency and Bankruptcy Code pertaining to group insolvency.

Research Methodology

This paper is descriptive in nature. Doctrinal Research Methodology is used to examine the issues and challenges of group Insolvency in India. It is a technique that entails digging deeper into the legal ideas and precepts from various sources, such as cases, precedents, statutes, and others; to study them and arrive at trustworthy conclusions.

Findings

Issues and Challenges

1. The term "commercial understanding" in the report's recommended definition of Group Company is unclear and could lead to an incongruent interpretation, resulting in a rush of frivolous applications before the adjudicating body, causing delays and overloading court infrastructure. To eliminate any stumbling blocks, the IBBI should develop a comprehensive definition of a group firm that encompasses all enterprises that are integrally linked, either horizontally (cross-ownership) or vertically (mergers and acquisitions) (layers of parent and subsidiary companies)

2. The difficulty with the Working Group's definition of "corporate group" is that it is exceedingly obscure and hence fails to be inclusive. It also creates a loose end by allowing the Adjudicating Authority to decide whether or not to include entities that are so inseparably connected that they form part of a "group" in circumstances where the definition does not apply to a specific organisation. As a result, a thorough and encompassing definition must be created to ensure that the bankrupt firm and the Adjudicating Authority are not burdened with superfluous litigation[14].
3. The Working Group has proposed a best-effort approach to Procedural Coordination Mechanisms by allowing parties to opt out of group insolvency in the interim. This may not be acceptable because it is likely to cause confusion in the processes and could be used to take advantage of the 450-day extension advised for cases filed as group insolvency. Only in extraordinary circumstances and with AA clearance can this option be available.
4. Managing a group CIRP is nearly impossible unless all lenders are on the same page. Even having different lenders in sub-groups can cause issues.
5. The Working Group proposed that a single Adjudicating Authority be established to handle group insolvency cases and it would be the one at the place where the application for insolvency was first admitted[15] in order to reduce litigation costs, conservation of judicial resources and reduction in time for admission of proceedings. If application has already been made for initiation of CIRP against group companies it needs to be transferred to the Adjudicating Authority first approached. Although some stakeholders were of the opinion that it would unfairly affect their interests if the insolvency applications were moved between Adjudicating Authorities while others have given some leeway in terms of appointing different adjudicating authorities, which makes the entire process hazy[16].
6. Another problem is with businesses with a high sale that are self-supporting financially and capable of keeping their business alive and well however, group members are leading them to bankruptcy. For example, KAIL was a part of Videocon group that were asked to be merged. Because KAIL was a self-contained firm with a significant turnover that could survive as a going concern on its own, the court decided to keep it out of the consolidation. If KAIL had been consolidated with various other companies, its combined value of assets would have dwindled, sabotaging its creditors' interests and leaving them ambiguous about their part in the Group's consolidated asset. Insecure creditors will indicate it in their readiness to extend credit or the amount of interest they charge. If operational creditors' assets are combined, their odds of holding 10% of the total outstanding amount are reduced. Consequently, their chances of becoming a member of the Committee of Creditors decrease, and if these creditors are neglected, no one will supply products or services on credit. Payment in advance would be required, which would be detrimental to the Indian economy. (State Bank of India & Mr. Venugopal Dhoot v. Videocon Industries Ltd & Ors.)[17]
7. Given that cross-border insolvency laws are still in their early stages of development, the application of cross-border insolvency rules to group insolvency is a concern that must be addressed.
8. Various judicial procedures have gaps because they do not include the rules of accountancy and Accounting Standards for the merger of distressed Corporate Debtors of a group and the calculation of loss with the plan of taking advatage in matters including Minimum Alternate TAX (MAT) as a group and MAT in the relation to a single assessee CD.

Recent Developments

Working Group V5 was established by UNCITRAL to deal with insolvency law, and it has progressed its work on enterprise group insolvency through its numerous sessions[11]. Key observations and recommendations of the Working Group include:

1. It was advocated that the interpretation of "Corporate Group include associate, holding, and subsidiary companies", and if so an affiliate isn't included in the definition but is inextricably related to being a member of a group in a "commercial understanding", the Adjudicating Authority has the option of including it in the group of firms.
2. EU and UNCITRAL bankruptcy regimes compel insolvency experts to provide information and restructuring plans for businesses. The working group also advised that IPs, creditors'

committees, and adjudicating bodies be required to share information about insolvency proceedings to avoid duplication of effort. On the other hand, it has been unable to devise a system for sharing information. One method is to upload the relevant data to information utilities in order to determine whether group insolvency procedures for a specific company are necessary.

3. A group coordinator should be designated to monitor the total asset valuation, common information memorandum, expression of interest, group CoC, and resolution plan, according to the working group. However, the Committee of Creditors of a group company may drop out of the insolvency proceeding by a majority vote after presenting a cause for doing so. In particular, the legislation should make it a condition that no corporation can pull back after a certain point, or else the process of insolvency will be derailed. Given the difficulties of group business bankruptcy, the working group has proposed changing section12 of the Code to increase the CIRP time limit to 420 days from 330 days.
4. The working group has recommended filing a single application to begin CIRP for group enterprises based on law of the EU, UNCITRAL, and German insolvency regimes. The working committee has proposed that group companies be assigned to a single IP unless the adjudicating authority believes that this will create a conflict of interest or will obstruct any firm's ability to continue as a going concern. The paper also recommends forming a group CoC, whose composition will be chosen by the CoCs of each group firm.
5. It also suggests that group firms' insolvency proceedings be handled by a single adjudicating authority. The research recommends empowering first adjudicating authority where a CIRP application has been submitted by changing Section 60(1) of the Code, which currently confers jurisdiction in the adjudicating authority where the corporate debtor's registered office is situated.
6. The working group advocated that the whole system of group insolvency must be started slowly with first starting from local domestic firms and only few parts of the administration system. This can be done by increasing the capacity building process of various stakeholders.

Need for Group Insolvency

1. Inter-linkages
2. Synergy and Synchronisation
3. Prevent/reverse vulnerable transactions
4. Avoid conflicting orders
5. Reduction in costs of insolvency proceedings
6. Reduce Information asymmetry
7. If the interconnected businesses are offered for joint bidding or resolution, the value of the assets realised can be maximised.
8. Reduction in costs of capital
9. Increasing certitude for stakeholders and preserving judicial time
10. Many of the assets may be difficult or impossible to dispose if liquidator's authority is confined to the assets of a single entity. The goal of maximising value will not be achieved[12].
11. There is dire need for this approach to be successful as money is needed to run the business which often in Indian scenario is provided by the holding company creditors and then transferred to affiliates.[13]
12. Businesses within the same group are connected financially through inter-corporate deposits or guarantees or operationally through dependency on the supply of raw materials. When each group company's insolvency is handled with separately, recognising these internal linkages takes time and money.

RECENT CASES UNDER IBC RELATED TO GROUP INSOLVENCY

The Code is lacking a thorough mechanism to handle group insolvency. In order to fill this gap, the Supreme Court and the Adjudicating Authorities under the Code have either used their authority to issue orders enabling the coordination of proceedings or have applied general corporate law principles regarding the piercing of the corporate veil to hold group companies accountable for one another which are discussed below:

In the standard-setting case, of State Bank of India & Anr v. Videocon Industries Ltd & Ors[18], the common creditor, led by State Bank of India, filed an application with the National Company Law Tribunal (NCLT), Mumbai Bench, pleading group insolvency of its 15 Videocon entities. However, The NCLT granted group insolvency to only thirteen out of the fifteen Videocon companies. After studying a number of US and UK case laws, the conclusion was reached that bankruptcy courts could order consolidation by exercising their powers. In effect, this decision lay the groundwork for the IBC's establishment of the single economic entity principle and the start of India's group insolvency system.

Homebuyers have also been offered assistance through group insolvency. In the case of Bikram Chatterji & Ors. v. Union of India[19], the Supreme Court stepped in to help the unhappy homeowners by ordering the attachment of all forty Amrapali group firms' properties and the freezing of all companies' and directors' bank accounts. In the case of Axis Bank Ltd & Ors v. Lavasa Corp Ltd[20], to minimise possible damages, the Lavasa group's insolvencies were merged by the NCLT from fragmented insolvencies, while acknowledging that the subsidiaries' insolvency was largely dependent on the parent's insolvency being resolved. The recent collapse of the IL&FS group[21] which consists of 348 firms, has prompted the IBC to govern the group insolvency structure. The holding company that took the majority of the loans, totalling roughly Rs. 91,000 crores, had only about Rs. 7,000 crores worth of assets. The borrowed funds were channelled through the secretive network of more than 300 businesses. If only the four largest businesses are considered to be insolvent, they would only be able to pay less than 10% of the overall debt. Many "group/network companies" are profitable, but have little money and liquidating them would be like completely destroying the company[22].

In Chitra Sharma v. Union of India[23], where Jaypee Infratech Ltd. was the target of insolvency proceedings however, having tie ups with both the subsidiary and parent company, the Supreme Court ordered that the main parent company, which at the time was not involved in the insolvency proceedings, must deposit a sum of INR 2,000 crores with the court. In Edelweiss Asset Reconstruction Company Limited v. Sachet Infrastructure Pvt. Ltd. & Ors.[24] the Appellate Authority ordered group insolvency for 5 businesses that had established a residential planned community together. Consecutive CIRP against them were required to be carried out against them under the direction of the same Resolution Professional in order to facilitate the colony's effective development. As a result of various resolved judgements, the law has evolved to the point where group insolvency is also admissible.

CONCLUSION AND SUGGESTIONS

Single insolvency proceedings initiated by the same group across various corporations in various areas worldwide cause excessive delay for inculpable creditors. Breaking the corporate veil and operating group companies as one making it in charge for the actions of its affiliates, will speed up and save the group companies money throughout the settlement process. Although there are no particular laws for group insolvency under the Indian Code, the courts have intervened and handled a number of cases utilising their legal judgment powers. To ensure consistency and clarity in the legislation, however, specific laws pertaining to this idea should be placed in the code. Investors must better manage their investments to prevent unnecessary administrative delays and other issues that would make India a less appealing place for investments. Though the Working Group drew heavily on Western legal precedents, considering that India's sound promoter group culture resembles many aspects with its Asian equivalent, the Working Group should have looked into other Asian legal regime as well. For example, the Japanese legal system could have been a good source of specialised procedural coordination norms, the handling of creditors' obligations when they have a significant stake in one company but a guarantee from some other in the same group, as well as the requirement of creditors' consent for significant consolidation. Firstly, it is suggested that a definition of 'corporate group' should be inclusive of the vertical and horizontal interconnection among companies or a definition based on Centre of main interest should be adopted to make the it thorough and complete in order to address any issues that may result from the ambiguity. Secondly, an efficient way to safeguard the interests of the stakeholders in the "corporate group" is to provide for the existence of several adjudicating authorities in specific circumstances, as given by various international legislations. Lastly, in order to protect corporations from unwanted consequences, regulations relating to the principle of extension of culpability in group insolvency procedures are urgently needed[25]. Nonetheless, if the working group's suggestions are carefully implemented, they will constitute a significant step forward in this insolvency reform. The working group's findings will serve as a roadmap for the group restructuring regime's proposed ongoing application, which would successfully address the challenges that have arisen in cases of group insolvency.

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Social Media: Changing Our World

Yogesh Maheshwari*

Abstract: *Social media change our world which has many dimensions. It allows your user to find your voice, stay in touch, measure the impact of services, create an audience, monitor trends and stay informed. The way we see news, interaction, politics, learning and business has affected almost every aspect of the way we live today.*

This paper focuses on how to change the social media of our world in the current scenario with different dimensions or parameters. For this document, I will use secondary data from different sources. I find a strong relationship between using Facebook and personal blogs and supporting civil liberties. People who devote more time to online advertising seem to appreciate freedom of speech more, but they also have less privacy rights than people who use social media frequently. That parameter suggests that social media may change people's behavior towards basic personal values and highlight the need for dynamic research framework that explain the cause effect relationship that the use of the online media may have on individual development.

Keyword: *Social Media, Online Media, socialization*

Introduction

Social media is a set of online communication channels dedicated to community participation, interaction, content sharing and collaboration. Here are some outstanding examples of social media.

Facebook is a popular free social media site that allows registered users to create profiles, upload photos and videos, send messages and stay connected with friends, family and colleagues. According to statistics Nielsen Group, Internet users in the United States spend more time on Facebook than on any other site.

Twitter is a free microblogging service that allows registered members to transfer short publications called tweets. Twitter members can transfer tweets and follow tweets from other users by using multiple platforms and devices.

Google+ is a social media project from Google, designed to replicate the way people interact offline closely from other social media services. The project logo is "rethinking the real life of the web."

Wikipedia is a free encyclopedia and open content online created by the collaborative effort of a community of users known as Wikipedian. Anyone registered on the site can create an article for publication. It is not necessary to register to edit articles. Wikipedia was founded in January 2001.

LinkedIn is a social media site designed specifically for the business community. The aim of this site is to allow registered members to create and document media of people who know and trust professionally.

Reddit is a social news site and forum where members of the site choose and promote social stories. The site is made up of hundreds of sub-communities, known as "Subredits". Each subredit has a specific theme such as technology, politics or music. The members of the Reddit site, also known as "Reddit", send content that other members then vote. The goal is to send thoughtful stories to the top of the site's home page.

Paint Rest is a social healing site for sharing and rating images found online. PaintRest requires a brief description, but the main focus of the site

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is visual. Clicking an image will take you to the original source, so for example, if you click on a pair of shoes, you can move to a place you can buy. A picture of blueberry pancakes can take you to a recipe. A picture of a whimsical birdhouse can take you to instructions.

Literature Review

Kobe (1998) felt that media education had not yet received popular support. He assumed that many parents, for example, would say they wanted their children to be computer literate to say they wanted their children to be educated in the media. Parents believe that computer experience can be an advantage in the labor market. He (2011) wondered aloud if the new technology made us stupid. Writing in the magazine "Anteos", he asked this question as the title of his research: If Google makes it stupid, what should librarians do about it? Social media as a new concept so that they did not take root in the lexicon of the code of ethics of social work organizations. However, it can not be overemphasized that the evolving practice of social action in the future will necessarily involve the widespread use of social media and web-based activities. Social media is a set of online communication channels dedicated to community participation, interaction, content sharing and collaboration. In the view of the headscarf, Boehner and Sawar (2007), social media are the main human communication, characterized by the characteristics of participation, openness, conversation, community and communication, andhighlighted that the new media (the description applied to social media) is used in times of crisis to share and exchange information that reaches millions The authors also point out that news from sources known as social media has an enormous impact and are even more reliable than traditional media in some cases. Sources of information on the Internet by "sharing views, views and experiences with others" (Marken, 2007, p. 10) and Social media techniques have also been used to create less restrictive political spaces (Eltoni and West, 2011) that help promote democracy, yet the call for "freedom of the Internet", created by the utopian cytopic view of the Internet as pro-democracy, is dangerous. A good question is how social media can be used to put existing strategies for democratic assistance in a particular country aside and allow the answer to this question to shape their strategic choices. "(Brewer 2011) In addition, any serious discussion about the SDD promise to help strengthen the It should be borne in mind that different types of mistrust differ in their particular characteristics and that this difference translates into different opportunities and risks depending on the political context in which they are used "(ibid., P.1). Content generated by social media. User-generated content, created through social network interactions by users through social media platforms, is linked to privacy issues. The practice of user privacy rape, though unjustified, will continue to the extent that it generates benefits For companies. Critics say companies like Facebook, Twitter and YouTube are making huge profits by using the right to monetize a company that does not belong to it. It is a great search for profits. Most social network operators follow business interests (ibid.). For this argument, Tim Berners-Lee (2010) warns that social media will not grow too much and become a monopoly because that tends to limit innovation. The threat to privacy is the transfer or liquidation of the parasitic from completed data (personal) to third parties with a certain economic interest (Soltern 2005). How to ensure that the content can be shared to the extent that the individual wants and not more is not an easy question to answer. Companies must be convinced that user privacy is an essential part of their mission, and social service providers should not expand their business at the expense of their users' privacy (Brewer 2011). There is endless debate about content ownership on social media platforms, as created by users and hosted by the company. There are still untapped opportunities and new areas to explore in the development of ICTs. Innovative convergence of information services, ease of use in the design of social media applications and advanced platforms for social media aggregation are essential to encourage the use of social media with a wider category of users. Currently, most social media sites are silos and do not allow users to transfer data from one site to another (Berners-Lee 2010). In terms of usability, human-computer interaction (HSI) approaches should be transferred from laboratories to real life environments where people want to use and experiment new technologies.

Innovative academic design studies emphasize the importance of monitoring real people in real life situations and promoting approaches that make user participation an integral part of technology production (Kelly 2002).

As a feature of the user interface, ease of use has to do with the ease with which target users can use the user interface to achieve Specific objectives, especially with satisfaction (meet user needs.) New ICT solutions should allow people to express the meaning of ideas, stimulate creative expression in culturally heterogeneous groups, and hardware tools Which allows different categories of users to generate content and participate in social change processes, improve new media literacy users, increase user interfaces with visual information to improve communication efficiency, etc. It is very important that ICT companies and social media work continuously and in collaboration with Different types of end-users when designing new social media solutions Social media is a difficult challenge for companies because many management approaches are developed to deal with users who want these companies to Listen, participate appropriately, and respond inadequately (Kitsman et al., 2011). In fact, MySpace lost its members due to fault management (Hartung 2011). Kitzman (2011) identifies seven functional components: identity, conversation, exchange, presence, relationships, reputation and groups, which have implications for how companies interact with social media and help understand the interaction needs of social media. By analyzing these components, companies can monitor and understand the diversity of social media activities in terms of their function and impact, which is important for developing a coherent social media strategy based on the correct balance of these key components of your society.

The Impact of Social Media: In the Current Scenario

Social media has become an integral part of online life with the proliferation of social sites and applications. Most traditional online media includes social components, such as comment fields for users. In business, social media are used to market products, promote brands, connect with existing customers and promote new business. Social Network Analysis is the practice of collecting data from blogs and social media sites and analyzing those data for business decisions. The most common use of social media analysis is to undermine customer opinion to support marketing and customer service activities. Social media marketing (CM) benefits from social media to help the company increase its brand exposure and expand its reach. The goal is usually to create content that is attractive enough for users to share with their social media. One of the key components of CM is the improvement of social network (SMA). Like Search Engine Optimization (SEO), SEO is a strategy to attract new and unique visitors to a website. HH can be done in two ways: Add social media links to content such as RSS and share buttons, or promote activities through social media through status updates, tweets or blog posts. Social generosity (customer relations marketing) can be a very powerful business tool. For example, creating a Facebook page for people who love your brand and the way your business is published allows you to click "Like" on your page, creating a place for communication, marketing, and creativity. Of media. Through social media sites, you can continue conversations about your brand for real-time market information and feedback.

From the customer's point of view, social media makes it easy to tell the company and everyone about their experiences with that company, whether those are good or bad experiences. The company can also respond very quickly to positive and negative feedback, address customer problems and maintain or restore or rebuild customer confidence. Enterprise social media allow the company to link people who share similar interests or businesses. Internally, social tools can help employees access the information and resources they need to work together effectively and solve business problems. Outside, public media platforms help organizations stay close to their customers and facilitate research that can be used to improve business processes and processes

Social media are also often used for group outsourcing. Customers can use social media sites to provide ideas for future products or modifications to existing ones. In IT projects, outsourcing usually involves involving and mixing business and IT services from a mix of internal and external service providers, sometimes with input from customers and / or the general public. On the other hand, the integration of social media into the business world can also pose challenges. Social media policies are designed to establish expectations of appropriate behavior and ensure that employee publications do not expose the company to legal problems or general embarrassment. These policies include guidance when an employee must identify himself as the company's representative on the social media site, as well as rules on what kind of information can be shared.

Incredible ways that Social Media are Changing the World

1. Social media do not make us more individual

Public opinion tends to look at social media and make us more individual and narcissistic, but this is not necessarily the case. It is said that individual social media have grown at the expense of more traditional personal relationships. Research has been found in some cases, but the most common social media are used to promote traditional groups, such as family, tribes and tribes, and to repair the ruptures caused by migration and mobility.

2. Social media is an important incentive for education

Spending a lot of time on social media can distract children from their studies, but the group found that many schools around the world also realize that social media helps informal learning and, perhaps, an essential means of education in certain circumstances.

Low-income families with weak prospects for formal education often benefit. The study provided examples where people in developing countries receive valuable education mainly through YouTube videos.

3. Selfies send different messages all over the world

People who take their own photos with a smartphone have been associated with self-obsession. But the search reveals a much more diverse picture of the Salvis taken for different purposes. In England, there are three different styles of Salves. In northern Chile, people created a unique kind of Sylvie in their area: "Footy", which represents the feet of a person while watching television, which signifies relaxation. In Italy, teens will take dozens of pictures and change makeup and clothes before making the right decision

4. Equality on the Internet does not mean off-line equality

Although easy social Media provides significant benefits to previously excluded populations, this may not have a general impact on social differences or repression at present. An example from China shows how social Media can provide a hidden way to keep people in place. Many Chinese social media platforms have similar games encouraging users to collect points and display levels achieved, often depending on the amount of activity on the platform features. This creates new forms of inequality on the Internet, because poverty restricts the time people can spend on the Internet, making it difficult to upgrade the rankings.

In other cultures, the study shows that people tend to associate with the "community" and do not usually make connections outside of their social status.

5. It is people who use social Media who create them, not developers platform.

Researchers found that this is the case all over the world, where people have found many creative uses of a free social Media function. The basic components of social Media are used to solve many problems in countries that are still developing business infrastructure and communications.

6. Public social Media are conservative

Public areas of social Media platforms such as Facebook tend to be conservative, and in many research sites around the world people avoid political and religious publications. Conversely, you can use more private social Media, such as WABSAB, to facilitate social change (sometimes radical). In India, in addition to monitoring by family and people, the type of content that people share on social Media is controlled by the attention of other members of the community to the person. There are problematic publications that can distort the whole class, an important social unit in India.

7. Now we "talk" through the images

Social Media have changed human communication to visual at the expense of text and sound. Now image or emoticons can become the core of our conversation. This benefits people who do not trust their communication skills, as we can now simply communicate with photos and images. Visual communication also helps to maintain daily intimacy between family members separated by large distances.

8. Social Media do not make the world more homogenous.

One of the main findings of the project is that people everywhere are generally finding ways to make social Media serve local purposes, rather than breaking international boundaries. Social Media is a new way of expressing cultural diversity rather than technology that has made the world more homogeneous. Residents in different parts of the world can use their local or regional platforms and dialects on the Internet that keep people separate, distinct and unconnected. This result makes me think of my presence in social Media. While I have links all over the world, I generally do not spend time learning online about their cultures. I tend to spend most of my time with people in the business world. . . People are similar to me. I do not remember close contact one of the social Media that I have in Japan, China or South Korea. A missed opportunity, right?

9. Social Media promote personal trade better.

Social Media help to develop aspects of commerce by expanding personal means, such as selling among peers. Connecting to social Media is a confidence-building tool that leads to new business relationships. In Brazil, people usually use the wattab to sell items to friends. In India, there is a great deal of new business activity based on social Media people online.Most companies are trying to have a presence on social Media, but companies that rely on the personal connections they need most. Sure, we also see this in the USA. With online training explosion and sales models.

10. Social Media have created a new type of group-based communication.

Prior to social Media, most communications were private or personal (messages or telephone) or public broadcasting (radio, television, newspapers). On the contrary, social Media are mainly dedicated to groups and allow us to expand different sizes of audiences and different degrees of privacy. "Collective communication" is something we take for granted today, but it is largely a recent impact on social Media. When considering this, this may be one of the deepest implications of the era of social Media: communication and easy collective collaboration.

11. Social Media are somewhere we live

Social Media is not just a communication or entertainment technology. Now is the "home" online. For some people who live away from their families, they can become the main place where they live, where they spend most of their time. When people are very far apart, they can re-feel close to living together in the same house.

12. Social Media can have a profound impact on gender relations

One of the areas where social Media had a profound cultural impact was gender relations, particularly in very conservative societies, which allowed young women and girls to establish direct and sustainable contact with others. In some cases, a critical element in this is the use of wrong accounts. In a convincing case study, a young Turkish woman describes how she can access music, art and literature that are not normally available to her in a conservative society. She used the nickname so she could not be recognized, but regrets that she did not know her music because of the need to use a pseudonym.

13. Talks and relationships are polymia

Most people now use a variety of platforms to organize their relationships or publish species. Now people also judge what the media or platform decides to use, making it a social and ethical problem. The researchers call this "polymia".

The study referred to examples where conversations jump from one platform to another. Complex and transnational relationships can change from preferred platforms to different regions of the world. I see this as a potential factor. I was recently in India, where the Wattasab is the main source of communication and communication. I realized that if I were not in this application I could miss the opportunities to connect with friends in that country. At the same time, conversations can change to Facebook or Twitter because this is where my friends in India know they can find me.

14. Memes has become a moral police

Throughout the world, memes range from serious ones, such as religious messages, to cynical humor and jokes. Mimes are often used to confirm a set of values and criticize others. People who may be shy to express their values and opinions use mimics instead. In some cultures, mimics quotes and inspirational images provide a way to express complex feelings like romance. In many parts of the world, humorous memes provide an outlet for difficult or serious situations.

15. Social Media pose a threat to privacy, but they can also provide privacy

In most areas there is considerable concern about the privacy threat posed by social Media. Social Media break down the vision that the home is protected and fortified protected. The threat of a stranger looking inside causes great anxiety. However, social Media can also provide a sample of privacy to those who have never met. Some of the largest populations in East and South Asia live in overcrowded and extended family conditions with limited expectations of individual privacy. For them, social Media can be the first experience with any kind of special connection.

Social Media also provide people with the opportunity to communicate and interact with absolute strangers, which has been difficult or impossible in the past. A case study showed how women in India celebrate the possibility of interconnected social Media outside the eyes of males.

16. In all industries, social Media are moving from being a "good product" to being an essential element of any business strategy.

"In just seven years, the newsrooms were completely stopped by social Media," said Claire Wardell of the Center for Digital Journalism. Social media skills are no longer outlets, but the responsibility of a small team in the newsroom, however, is that social Media influence the way the organization works. "This trend is already spreading to companies outside the press room, either for digital marketing or new channels of communication to serve Etc. Other industries should take into account the lessons learned (or not) by the newsroom and ensure they are one step ahead of this disruption enabled in social media.

17. The platforms for social media can be the banks of the future

Imagine being able to pay rent or make an investment through your favorite social network. This can not be far, says Richard Eldridge of Lendu. "Social Media transforms banking relationships in very important ways, from improving customer service to allow users to send money to others through online platforms." New financial technology companies are using social Media to help people simply open a bank account social Media can even affect their ability to get a loan.But it will not be without its problems: "The biggest challenge is to maintain security standards and to ensure that customers are informed about personal information, and banks need to implement sophisticated policies in social media."

18. Social Media shake health and public health

The health industry is already using social Media to change its work, either through public health campaigns or virtual visits by Skype doctors. It has also helped groups of people, such as patients with the same condition, to stay in touch, says Shannon Dusmagen of the Open Science and Technology Laboratory and Lee Ice of the Mayo Clinic Social Media and Health Network. Social media: "Social media have been responsible for significant changes in both personal health and society, especially by facilitating a large number of people to exchange information quickly." This is not always good: although social Media help official agencies and experts to quickly exchange important information, such as during an outbreak, it has a nuisance. "Social Media is a two-way road, allowing non-experts to share information with the health agencies, if not more." This is the future that the health industry needs to plan: "Health agencies must have pre-created information plans to be able to respond, counter misinformation, or support accurate information.

19. Social Media change the way they govern and govern

Civil engagement and engagement with social Media has been transformed: "Social media allow citizens to be the source of ideas, plans and initiatives in an easier way than ever before,". In the future, we can expect more and more leaders to adopt this kind of transparent governance, because it is easier for them to interact with their constituents: "While politicians and government officials sometimes travel to interact with citizens, Among them, providing a platform for direct access to government initiatives. "Before the start of social Media, governments, along with traditional media, were the guards on information. "This relationship has been largely disrupted by the simultaneous increase in digital technology and the ecosystem of the social network that has been allowed," said Taylor Owen of the University of British Columbia. This challenge is even more acute in the world of international affairs and conflict, where the emergence of indigenous local digital actors has challenged state governance. "The emergence of an intelligent terrorist organization is just two examples of this change of power, which requires a complete rethinking of the concept of governance.

20. Social Media help us better respond to disasters

From the safety check of Facebook, which allows users in disaster areas to be a safe sign, until the appearance of the network of CrisMapers, we have seen many examples of how social Media and digital communications in general help to respond to disasters.That seems to be going on, says Heather Lisson of Qatar Computer Research Institute. In fact, more and more of us will use social Media to contribute to disaster mitigation from where we are: "Those who respond digitally can log on immediately when news about a natural disaster or disaster created by human beings." Teams are activated based on skill sets of voluntary and technical communities "These digital respondents use their time and technical skills as well as their personal means to try to help ease the burden of information overloading official humanitarian assistance in the field." These digital humanitarian workers will help bridge the gap in the global disaster response.

Social Media help us to address some of the world's greatest challenges, from human rights violations to climate change

The Arab Spring may have been one of the best known examples of how to change the social Media of the world. But it is more than gathering activists:

it is also about detaining perpetrators of human rights violations. “Shared content on social Media has an increasing potential to be used as evidence of atrocities and human rights violations in wartime,” said Esraa El Shafei of Middle East Youth and Melissa Tias of Kroedvois. “After the verification and reconstruction of forensics by prosecutors and human rights defenders, these videos are potential evidence that could be brought in a single day before an international court.”

Conclusion

In short, despite the positive benefit of the rapid exchange of information, social Media allow people to create false identities and shallow connections, and cause depression, a basic recruiting tool for criminals and terrorists. Finally, given that social Media are relatively new phenomenon and impact studies are also fairly new, I think the advantages of social Media are being highlighted very frequently, unlike their negative aspects, which are rarely as they say. This trend must change, and I hope my presentation will help motivate users by better informing users on both sides of the argument. Although the change is good, necessary and inevitable, it always price. Reducing positive impacts does not harm the long term such negative. In this presentation I have explored the damage caused by these new means of communication without supervision and supervision, which puts us all in a gradual collapse of social cohesion and the destruction of our traditional values systems unless we have the responsibility to ensure that our understanding of the media and its effects is continually evaluated with what is happening in the world.

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Web Links

- https://www.weforum.org/agenda/2016/04/6-ways-social-media-is-changing-the-world/)

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- (http://whatis.techtarget.com/definition/social-media) http://wpmu.mah.se/nmict11group1/category/uncategorized/

A Study of Social Media: Shaping the New World

Ms. Monika Pawar*

***Abstract**: Information and communication technology has transformedswiftly over the past 20 years with a key development being the emergence of social media. The rise of the Internet has spurred the development of web-based communication platforms. Digital platforms have been growing stronger throughout the last decade, facilitating the exchange of information. Online content has undergone a transformation from being a source of raw data to also becoming an interactive tool, enabling the public to collaborate on projects through the exchange of knowledge and opinions.As a result, consumers of information have now also become producers of information. People with common interests organize online groups and societies in which every participant can contribute by using social tools such as social networks, videos, blogs and photo-blogging to establish common ground. The Internet permits any person to influence public outlook, creating inclusiveness and a new dimension for public relations.This paper tries to analyze the effects of the growth of social media and its insinuations in the society. This paper also tries to find out the worth of social media as a tool of communication*

Introduction

Today, social media has a significant impact on the way we see the world. Networking, entertainment, and hard-hitting journalism within the digital sphere have become a part of everyday life. Leaders now turn to the web to create a squish, influence others, and have their voices heard. Through the power of social media, organizations and individuals can reach audiences in staggering numbers not previously accessible through traditional media channels. However, these days it has been observed that most of the corporate houses also engross in social networking while promoting their products and services. Very often, the head honchos of the business groups tries to maintain a healthy relationship with their valued customers. Social networking sites are now seen as a promising means of advertising, which each brand must embrace. Social media as a medium of promotion contributes, through its immediacy, to a healthy and direct relation between brands and their public in an online environment. This proximity offers the public the ability to be present, to connect, to influence and retain a stronger position towards brands. In addition to using social platforms to monitor conversations about their industry, competitors, and products, companies are increasingly reaching out to their customers via the social Web to communicate messages about what they have to offer. In fact, social media is altering the way organizations communicate — the numerous social tools that are accessible today are very cost-effective compared to traditional approaches such as email and online advertising. Blog posts and tweets enable businesses to create communities, offer immediate feedback or assistance, and promote their products and services.

Objectives

1. To have a theoretical and conceptual understanding of Social media
2. To determine the effectiveness of social media as a tool to influence the masses

Literature Review

Social Media

Social media can be defined as interactions between an individual and a social media platform (e.g.,

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Facebook). Using social media has become the most popular activity on the Internet. Research suggests that individuals devote 27 percent of the time they spend online to social media—more than entertainment, email, and news activities combined (Tatham, 2013). Clay Shirky (2011) is one of the early scholars to write about social media as a new social networking tool for collective action. He claims that over the years, the world communication system has gotten thicker, more multifaceted, and more participatory. People have gained greater access to information, more chances to engage in public speech, and thus, an enhanced ability to undertake collective action (Shirky 2011). In a sample of over a thousand business professionals, employees admitted to routinely checking their Facebook, LinkedIn, and Twitter "inboxes" throughout the workday (Ott, 2010). Social media and Web 2.0 are often used as synonyms, but actually they are not (Kaplan &Haenlein, 2010; Weinberg &Pehlivan, 2011). Social media is "a collection of Internet-based applications that build on the philosophical and technical foundations of Web 2.0, and that allow the formation and exchange of User Generated Content" (Kaplan &Haenlein, 2010, p61), whereas Web 2.0 is comprised of computer network-based platforms, on which social media run or function

(Weinberg & Pehlivan, 2011). Although there is no definitive typology of social media (Kaplan and Haenlein, 2010), it is common to classify social media as social networking (e.g. Facebook), social bookmarking (e.g. Digg), video-sharing (e.g. Youtube), picture-sharing (e.g. Flickr), professional networking (e.g. LinkedIn), user forums, weblogs (or blogs), and microblogging (e.g. Twitter) (Fischer &Reuber, 2011).

In social media communities, enormous number of members is engaged together in a conversation that leads to the generation of online content (Thackeray, Neiger, Hanson, & McKenzie, 2008). For example, Twitter, one of the fastest growing social networks in the Internet, has experienced a burst of popularity consisting of several tens of millions of users who actively participate in the creation and propagation of content (Asur&Huberman, 2010). As such, social media makes it possible to reach large amount of people with common interests globally (Hanna, Rohm, & Crittenden, 2011; Okazaki & Taylor, 2013). Furthermore, the wide range of online and word-of-mouth forums encompassed by social media provides an unparalleled platform for community members to publicize and share their product experiences and opinions (Chen, Fay, & Wang, 2011). Electronic word-of-mouth, which has a large impact on consumer decisions (Feick& Price 1987; Leonard-Barton, 1985), increases the speed of the spreading of community members' experiences and opinions (Thackeray, Neiger, Hanson, & McKenzie, 2008). More specifically, the electronic word-of-mouth in social media can create a group's influence faction by facilitating information exchange, providing recreational pastime, and bringing users together (Hennig-Thurau, Walsh, & Walsh, 2003; Lee &Youn, 2009; Okazaki & Taylor, 2013). Therefore, social media has fundamentally altered marketing's ecosystem of influence (Walmsley, 2010).

Social Media Contribution in Education Field

Social media is an immense contributor to the educational field. Social sites have huge members with rich experiences and credentials. There is so much to gain as new concepts, awareness regarding seminars, conferences, what is happening around the world. You may be shy as a student in the class rooms but you can pose queries to your online teachers and get your things solved within no time. There are some of the sites which are dedicated specifically for the education, research and developments. LinkedIn enables to connect with like-minded teachers and groups to advertise credentials and experience. Twitter allows announcing and sharing news, ideas and resources, not just to colleagues but also to students. YouTube allows broadcasting the achievements. Facebook and Whats App groups can create educational spaces that are more innovative and produce much brighter outcomes. Besides certain social media platforms can also be precious tools for specialized networking, either within precise subject fields or across different disciplines and professions like ResearchGate or Academia.edu etc. Covering conferences live on social media allows others to follow and participate in discussions online who might not have been able to attend – or maybe were not even aware of the conference in the first place. This increases dissemination and reach of current research.

Social Media can be Classified into the Following Categories

Social Networking Sites: A social networking site provides a web-based platform for building social networks or social relations amongst people, e.g., shared interests or activities. They provide a means to interact over the internet, electronic mail and now even the mobile phones. The most popular websites offering social networking currently are MySpace (started in 2003), LinkedIn (started in 2003), Facebook (started in 2004) and Twitter (started in 2006). A social networking site would permit a user to make profiles or personal sites online and build up a social network. The profile page thus created is like the user's personalized webpage and contains profile information of the user like gender, religion, orientation, interests, place of birth, current location, marital status, books liked etc. The page can be modified as the user wants and comprise video clips, music files or photographs on their page. Also included on the page is a list of friends that form the user's network. Typically, these friends are actual friends, associates, and even strangers, who may have sent a friend request and the user has included them in his/her list.

Blogs: A blog (derived from the word weblog) is an ‾online journal where an individual, group, or corporation presents a record of activities, thoughts, or beliefs. There are many websites that allow users to create blogs without any paying any fee like Wordpress.com, Blogspot.com, and blogger.com. Anyone can create a blog on these websites and these blogs can be accessed by anyone by typing the web address or URL (Uniform Resource Locator). Another popular sub category of blogs is micro blogging. A micro blogging site is similar to blog except for it limits the number of words that can be published in one message. Twitter.com is an example of micro blogging.

Content Generating and Sharing Sites: These sites serve as sources of information for various topics. Photo-sharing sites like Flicker.com, picasaweb.google.com, Video sharing sites like youtube.com, slide sharing sites like slideshare.com, document sharing sites like docstoc.com etc all fall under this category. These sites aid as free content for all users of internet. Users can hunt for content, download and use the content available on these sites without any fee. The content is also generated by the users. This type of user generated content is also known as crowdsourcing. Video and PowerPoint presentation can be shared and uploaded in YouTube and slideshare. This is a major advantage to most of the people who are unable to get access to the educational resources.

User Appraisal Sites: User appraisal sites assist as a platform for assessments of various products and services. Though it is possible for consumers to express their view in any of the medium, user appraisal sites mainly deal with such reviews. Sites like www.mouthshut.com, www.pagalguy.com are majorinstances of such websites. These websites serve as a starting point of consumer's decision making model for gathering information about products or services they are contemplating of buying. As such these sites serve as significant word of mouth for customers and a basis of expressing post purchase feedback.

Social Media Networks Impact on Organizations

In this contemporaryworld the internet is independently the fastest way to gain consumer attention and at a wide reach, one of the means in which organizations have found to connect with their consumers is through the social media. Social media websites such as Facebook, Twitter, Google+ and Pinterest represent aenormous opportunity for businesses to grip the attention of customers while concurrently building a brand image. Businesses have been well educated of means in which they can use social media sites as a stepping stone to generate brand awareness or campaign to the consumers.

Word of Mouth: Social media platforms provide the seamlesschance to take advantage of word of mouth and to see it spread. Social media is rising at its fastest rate in developing countries. People are connected on a global scale and informallycontribute in each other's lives through online observation. "Liking" a brand on Facebook can spread virally rapidly throughout the numerous social media channels. Kietzmann stressed that customers feel more comfortable concerning opinions of their peers than paid commercial by businesses. Videos can also act as reference for review of products and services through YouTube, which in many cases is then shared and dispersed via various other social media websites these reviews can act as foundations for customer buying decisions. As a result, businesses can and do deliver products to popular YouTube users to review for their subscribers as well as make their own branded YouTube channels with branded videos about their products

Communicating with Customers: Organizations can use it as an advantage by communicating with the unsatisfied consumers directly and taking a full advantage of social media hereby promising to change or improve the product they are offering. Organizations have even taken this chance to ask its customers opinions about forthcoming events concerning their brands especially consumer based organizations.

Considerations and Influence: Social media has had a vasteffect on business, marketing and on how organizations engage with their target market. The usage of social media to share and participate with others continues to grow, so it would be wise for any business to develop and implement a sustainable social media strategy in order to positively take advantage of this quickly changing environment. Another influence of the social media is the invention of ‘Trending Topics’, A trend on Twitter refers to a hash tag-driven topic that is immediately popular at a particular time, Trends are determined by an algorithm that displays hot subjects grounded on who you follow and where you’re located. These ‘trends’ assist organizations in knowing what are suitable and what is not at a specific time in the market.

Social Bakers: Social Bakers is a social media analytics and publishing firm that provides social media management services and deep data analytics for thousands of brands that shop on Facebook, Twitter, Google+, LinkedIn, YouTube, Instagram, and VK. It gives organizations the chance to display and enhance the effectiveness of their social media movements, benchmark against competitors and industry standards, and track the right social media Key Performance Indicators (KPIs) in order to improve their marketing success and efficiency. The site provides data on fastest growing presence on social media according to industry i.e., celebrity, brands, entertainment.

Conclusion

Social media connections contribute significantly to the production and flow of popular cultural expressions in the simulated world. Social media achieve this, among other ways, through the construction and popularization of slangs and new linguistic styles, which are understandable to most online users across borders, thus leading to a global culture. From hashtags (#) used by activists, to live streaming of uprising and live comments and replies, social change has a new avenue for voices to be heard.Social media has inarguably allowed greater political awareness and organization, redrafting political landscapes and instigating significant change in the way we live today. Social media can be effective for building social authority; individuals or organizations can establish themselves as specialists in their fields, and then they can begin to influence these fields. Thus, one of the foundational concepts in social media is that, with social media, one cannot regulate one‘s message completely, but one can contribute to discourses.

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Dominance of the Digital Media Over the Development Paradigm

Gunjan Sharma*

Abstract: *Digital age has fundamentally altered the nature and functions of media in our society. Digital media has changed the trends of mass communication and theories of development; it has changed the practice of public communication. Digital media is challenging the role of the gatekeepers in news and entertainment industry. As world is changing very fast, a research is required to know the impact of digital media on development paradigm. The paper will discuss about the digital media landscape has altered the interaction of the people with each other, how they communicate, the types of community are formed in digital media, how opinion are shared. Aim of the paper is to explore and understand the impact of digital technologyon the theories of development.*

The paper will discuss the dominance of the digital media over the development paradigm, that how the pre -digital era formed in development and explain that people are changing and modernizing, but there was initially ignorance of the digital technology. Next stage is Digital era were conceptualized digital media become the useful tool for the development. The paradigm arose, as there is a rough synchrony between general availability of the internet - tool in search of purposes and Millennium development goals. The concept of development discusses the modernization, dependency, and multiplicity paradigms were they have the different approaches of development. This paper rigorously assessed the different characteristics of development paradigm.

Keywords: *Digital Media, Development Paradigm, Modernization, Dependency and Multiplicity Paradigm.*

Introduction

Information and communication technology has changed rapidly over the past 20 years with a key development being the emergence of social media. By the development of mobile technology social media has played an important role. Across the globe, mobile devices dominate in terms of total minutes spent online. This puts the means to connect anywhere, at any time on any device in everyone's hands. The internet has probably been man's greatest invention since sliced bread. Having created another world that is virtual can be deemed as a huge accomplishment. And with the range of devices now supporting its usage, it is in everyone's reach. And even as we speak of devices, there have been several advancements in both software and hardware. We see a new smartphone, or a new laptop with an upgradation very, very frequently.

The world has picked up pace, and this so by leagues. One cannot simply afford to lose a day's track in order to keep himself updated with information. The world as we know it, changes daily. Here is always something happening. And the electronic devices that so loyally supply is with that information are digital media. And it is not just restricted to the internet. With all the applications and multimedia stored in the devices' disk and drives, digital media has a plethora of various applications. And they all have an impact.

We all have heard how playing games on a computer or a gaming console harms our eyesight or does

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nothing to produce any physical work. How we are addicted to checking messages and taking social feeds on websites. Surely digital media has its downsides in the abovementioned, but we carelessly overlook the benefits of man's second best invention and its partner, digital media.

The importance of digital media cannot be stressed enough in the field of journalism and mass communication. In a competitive and speedy world, it is vital for news agency and broadcasting channels to get maximum coverage. Digital media is the sole most important component in the field. When it comes to interactive learning actively used in modern education structures, digital media enhances a child's learning process. Even with digital devices, user interface and interactive applications assist in one's motor skills and application skills. And we all know how an interactive application is much better at user interaction and feedback than a book.

Digital media has been an indispensable catalyst on the font of technological advancement and human growth. We can now sit at home, read all about any event, from any corner of the world, and the choice is all ours too! Not only news, digital media has provided a thousand more ways of entertainment and recreation. Amidst the criticism that it allows little or no physical exertion, there have been applications and devices created to provide physical and fitness development. Apart from that, digital media's impact has been worthy to take note of. It has not only provided a new dimension to our lifestyle, but has also lead to the development of communication skills, and worldwide accessibility.

The core concept of development has always been a debate, as some believe it is related to economy, other believe it is related to an intangible entity such as nationalism. The roots of modern development theory go back to the mid-20th Century. After the last remains of European empires and colonial structures in Latin America, Africa and Asia crumbled in the 1950s and 1960s, a crucial question in policy and academic quarters was how to address the abysmal disparities between the developed and underdeveloped worlds (Waisbord, 2002). There are several ways to define the aspect of development, as it is almost a multifaceted entity. The concept of development ever since the beginning has always been emphasizing the core concept of Westernization and this concept has also paved the way for development communication. Term "D*evelopment communication"* is to enhance the quality of life of populations,including increase income and well-being, eradicate social injustice, promote land reform andfreedom of speech, and establish community centers for leisure and entertainment (Melkote1991, 229). An introductory overview of the evolution of development communication hasshown, the basic framework of communication for development has drastically shifted in globalized world. Itchanged from a rather simplistic and blunt one-way, asymmetrical approach that wasused toinfluence, or rather brainwash, the non-Western target audience to adhere to Western norms to amore sophisticated, two-way symmetrical approach that aims to include the target audiencethrough various means of participation.

Development Communications have evolved with time: Initially, development communications was characterized by the use of mass media that considered people as audiences ready to be influenced by the messages they received, which was pure and simple one-way asymmetrical communication. This specific communication perspective is rooted in the basic Sender-Message-Channel-Receiver (SMCR) model. However, the model has been criticized for not being effective and it has been revised several times to enhance its effectiveness. Aspects such as feedback were included to design a more symmetrical flow of communication.

The Characteristic of Development Paradigm

Modernization Paradigms (1945-1960): It is the oldest and dominant paradigm founded in Western Neo-classical economic theory. It was the first attempt to articulate the problem of underdevelopment. This paradigm stresses the transfer of technology, socio-political culture of developed societies (industrialization) to the traditional societies as the quickest means to let them enjoy development. In other words, imitation of Westerns or Westernization is development.

The role of media communication: Because the problem of underdeveloped regions was believed to be an information problem, media communication was presented as the instrument that would lead directly and play a central role to solve it. Later, even seen as, the proxy to development. The media were both channels and indicators of modernization. They are motivators and movers for change and modernization since the mass media could speed up and ease the long slow transformation.The most significant in explaining the role of communication in this paradigm are Daniel Lerner, with his concept of empathy, Everett Rogers with his idea of Diffusion of innovations andWilbur schramm with the importance of mass media in modernization process in persuading thereceivers to adopt it and termed it as the magic multipliers, therefore, the mass media wasregarded as, mobility multipliers.

Critiques on Modernization Paradigm

Albeit efforts had been made by Western scholars,at last, what ought to be seen was lacked though there were some improvements. I.e. education,health, and agrarian practices improved in the southern hemisphere.

In a nutshell, it ignored indigenous ways, historical and cultural traits of third world nations,focuses on individual level, ignored the issue of media ownership, control, content, and structure,at the expense of these, contents were based on,mostly, Americanization. On the other hand,lack of participation is a failure for dominant paradigm. In addition, it promoted external causesof poverty and underdevelopment, and blames the victims themselves for their poverty.

Dependency Paradigm (1960-1980): This paradigm came as counteract o dominant paradigm and it is the first development theory that was formulated in poorer nations. The chief architect of dependency theory was RaiilPrebisch, an Argentine economist. Theorists of this paradigm believed underdevelopment is a result of the world process of capital accumulation and it cannot be seen apart from development. Dependency paradigm is well known for its cultural imperialism approach that proposes a dominant sociopolitical group influences and shapes the culture of weaker groups, or nations, through mass media and other practices and institutions.

Critiques of Dependency Paradigm

Dependency theory also commits the fallacy ofcomposition by equating economic development with development. This is partly because itdeems import substitution industrialization as a key pathway to development. Secondly, itscore/ periphery dichotomy serves merely to analyze the structure of economic relationships between the developed and the Third Worlds. Hornick, (1998) stated two broad categories for itsfailure,

"Theory failures" and program failures. (Birhanu,2009: 136). In contrast, McAnany(1983) characterized dependency theory as " good on diagnosis of the problem but poor on prescription of the cure" (Cited onServaes, J. 2008:163).

Multiplicity Paradigm (Since 1980s): This paradigm is also referred as participatory communication for development oranother development. It came up with a new say which stresses, one way or another, there interdependence of nation states. Development is an integral, multidimensional, and process that can differ from society to society. This paradigm emphasize on cultural identity. This was the first time that greater emphasis had been put on the interpersonal channels.Therefore, participatory communication model emphasize people as the nucleus of development.

Development Model and Development Content: Development is assumedmultidimensional as it includes social development and good governance, eliminating poverty,developing democracy, and others, other than economic growth or the struggle to be free.In Multiplicity Paradigm more attention is paid to the content of development, which implies amore normative approach. It favors a multiplicity of approaches on the context, the basic, feltneeds, and the empowerment of the most oppressed sectors of various societies at differentlevels. I.e. Cultural identity, local knowledge and capability, gender equality, empowerment,good governance, participation, human right, eradication of poverty, basic needs, anddemocracy.

The causes of underdevelopment: Internal as well as external factors inevitably influencethe development process. Development has to be studied in a global context, in which Centerand Periphery, as well as their interrelated subdivisions, have to be taken into consideration.(Servaes, 2002: 271).

How to effect development: By giving choice for local people and by contextualizingdevelopment issues. Participation, mobilizing and giving much emphasis for the public will bringthe intended development.

Key Issues about Development Communication: Many myths and misconceptions are nurtured about communication, especially when related to the field of development. These misconceptions can often be the cause of misunderstandings and lead to inconsistent and ineffective use of communication concepts and practices. The first two points on this list are about communication in general, while the others refer to development communication in particular.

"Communications" and "communication" are not the same thing. The plural form refers mainly to activities and products, including information technologies, media products, and services (the Internet, satellites, broadcasts, and so forth). The singular form, on the other hand, usually refers to the process of communication, emphasizing its dialogical and analytical 6 functions rather than its informative nature and media products. This distinction is significant at the theoretical, methodological, and operational levels.

There is a sharp difference between everyday communication and professional communication. Such a statement might seem obvious, but the two are frequently equated, either overtly or more subtly, as in, ‾He or she communicates well; hence, he or she is a good communicator. A person who communicates well is not necessarily a person who can make effective and professional use of communication. Each human being is a born communicator, but not everyone can communicate strategically, using the knowledge of principles and experience in practical applications. A professional (development) communication specialist understands relevant theories and practices and is capable of designing effective strategies that draw from the full range of communication approaches and methods to achieve intended objectives.

There is a significant difference between development communication and other types of communication. Both theoretically and practically, there are many different types of applications in the communication family. In this article I refer to four main types of communication: advocacy communication, corporate communication, internal communication, and development communication. Each has a different scope and requires specific knowledge and skills to be performed effectively. Expertise in one area of communication is not sufficient to ensure results if applied in another area.

The main scope and functions of development communication are not exclusively about communicating information and messages, but they also involve engaging stakeholders and assessing the situation. Communication is not only about ‾selling ideas. Such a conception could have been appropriate in the past, when communication was identified with mass media and the linear Sender-Message-Channel-Receiver model, whose purpose was to inform audiences and persuade them to change. Not surprisingly, the first systematic research on the effects of communication was carried out soon after World War II, when communication activities were mostly associated with a controversial concept—propaganda. Currently, the scope of development communication has broadened to include an analytical aspect as well as a dialogical one—intended to open public spaces where perceptions, opinions, and knowledge of relevant stakeholders can be aired and assessed.

Development communication initiatives can never be successful unless proper communication research is conducted before deciding on the strategy. A communication professional should not design a communication campaign or strategy without having all the relevant data to inform his or her decision. If further research is needed to obtain relevant data, to identify gaps, or to validate the project assumptions, the communication specialist must not hesitate to make such a request to the project management. Even when a communication specialist is called in the middle of a project whose objectives appear straightforward and clearly defined, specific communication research should be carried out if there are gaps in the available data. Assumptions based on the experts' knowledge should always be triangulated with other sources to ensure their overall validity. Given its interdisciplinary and cross-cutting nature, communication research should ideally be carried out at the inceptionof any development initiative, regardless of the sector or if a communication component would be needed at a later stage.

To be effective in their work, development communication specialists need to have a specific and in-depth knowledge of the theory and practical applications of the discipline. In addition to being familiar with the relevant literature about the various communication theories, models, and applications, development communication specialists should also be educated in the basic principles and practices of other interrelated disciplines, such as anthropology, marketing, sociology, ethnography, psychology, adult education, and social research. In the current development framework, it is particularly important that a specialist be acquainted with participatory research methods and techniques, monitoring and evaluation tools, and basics principles of strategy design. Additionally, a good professional should also have the right attitude toward people, being empathic and willing to listen and to facilitate dialog in order to elicit and incorporate stakeholders' perceptions and opinions. Most of all, a professional development communication specialist needs to be consistently issue-focused, rather than institution-focused.

Development communication support can only be as effective as the project itself. Even the most well-designed communication strategy will fail if the overall objectives of the project are not properly determined, if they do not enjoy a broad consensus from stakeholders, or if the activities are not implemented in a satisfactory manner. Sometimes communication experts are called in and asked to provide solutions to problems that were not clearly investigated and defined, or to support objectives that are disconnected from the political and social reality on the ground. In such cases, the ideal solution is to carry out field research or a communication-based assessment to probe key issues, constraints, and feasible options. Tight deadlines and budget limitations, however, often induce managers to put pressure on communication experts to produce quick fixes, trying to force them to act as short-term damage-control public relations or ¯spin doctors. In such cases, the basic foundations of development communication are neglected, and the results are usually disappointing, especially over the long term.

Development communication is not exclusively about behavior change. The areas of intervention and the applications of development communication extend beyond the traditional notion of behavior change to include, among other things, probing socioeconomic and political factors, identifying priorities, assessing risks and opportunities, empowering people, strengthening institutions, and promoting social change within complex cultural and political environments. That development communication is often associated with behavior change could 8 be ascribed to a number of factors, such as its application in health programs or its use in mass media to persuade audiences to adopt certain practices. These kinds of interventions are among the most visible, relying heavily on communication campaigns to change people's behaviors and to eliminate or reduce often fatal risks (for example, AIDS). The reality of development, though, is complex and often requires broader changes than specific individual behaviors.

Media and information technologies are not the backbone of development communication. As a matter of fact, the value-added of development communication occurs before media and information and communication technologies (ICTs) are even considered. Of course, media and information technologies are part of development communication, and they are important and useful means to support development. Their application, however, comes at a later stage, and their impact is greatly affected by the communication work done in the research phase. Project managers should be wary of ¯one-size-fits-all solutions that appear to solve all problems by using media products. Past experience indicates that unless such instruments are used in connection with other approaches and based on proper research, they seldom deliver the intended results.

Participatory approaches and participatory communication approaches are not the same thing and should not be used interchangeably, but they can be used together, as their functions are often complementary.

Current Theories

New media technology theory began around the same time as the introduction of the computer. The trend of these theories is to examine the interplay of traditional and new media and to discuss the cultural impact of new media. The interplay and associated new developments is referred to as media convergence. Marshall McLuhan, an early theorist, said new forms of media result from the integration of multiple media. Similarly, Fidler said that traditional forms of media change in response to emerging new media. New media improve upon or remedy prior technologies. Existing media are mixed and repurposed into new forms; media converge. Moreover, media development today is the convergence of different media industries and digital technology to produce multimedia.

Additionally, new media technology has changed the flow of communication from a linear to a three dimensional form of information. The roots of this philosophy lie in hypertext, which is a method of organizing and presenting information on a computer in an order at least partially determined by electronic links (hyperlinks) the user chooses to follow. Thus, mass media grows from one way communication to incorporate interactive communication. Interactivity allows feedback to enter the system as every stage of the communication process, from acquiring and processing to storing and distributing. "As our ways of storing manipulating, and retrieving information change, so too do our perceptions of the world." Much of our perception of the world is determined by our access to information.

New media technology introduced two major differences in media access. Time and geographic distance are insignificant with satellite and computer networks. The same hardware offers limitless channels of distribution that come without centralized control. These technological changes initiate new culture. McLuhan described this as the "global village" in which electronic communication would break down the barriers and obstacles encountered in traditional media by allowing people to see, experience, and understand more [2]. Similar to McLuhan, Bolter and Grusin explain that we define ourselves through our media. In traditional media, the audience understands the content from the producer's point of view. Interactivity allows the user to have controls over how and what content is viewed. Note how even the role of the audience has changed as reflected by the term "user." This operational freedom is significant to our culture because it corresponds, "to various attitudes about the role and value of the individual [3]." While media do not determine cultural or individual identity, the technology influences how we see ourselves and the world we live in.

The Future of New Media

Pretty amazing stuff, don't you think? As you dig a bit deeper into the topics —ones that will prepare you to become a producer of sophisticated digital media—you need to accomplish two objectives: 1) You need to understand the place in which you find yourself presently situated within the overall media landscape, and 2) You need to realize what it is that you're either actively doing or that you have the potential to be doing with all of this digital media. The coming decade's wave will provide all that information to people not just through desktop and laptop computers but via all mobile devices, vehicles, the electronic equivalents of flexible paper, and even television sets. Almost all the new mobile phone handsets are being designed as 'all-screen' models with full Internet access. Many top-of-the-line handsets are also being designed to receive streaming video signals (even if only through arrangement between the cellular carrier and television networks). Because most people replace their mobile phone handsets every two or three years, these new handsets mean that probably by the middle of this coming decade the number of people who have Internet access will increase from 1.8 billion to approximately 4.1 billion; the number who use mobile phones — 60 percent of the world's population. Moreover, many of the world's major manufacturers of television sets, companies such as Sony, Samsung, and LG, have announced that most of their products in 2011 will be able to connect directly to the Internet. People will be able to view YouTube, Hulu, any other video streaming sites, as well as all Web sites, via their television sets. Television sets with Internet access will also be able to circumvent the limited number of television networks and channels available terrestrially or from local cable television service providers. Software programs (such as Livestation.com, a harbinger of what's to come) already allows users of personal computer, iPhone, or Android mobile phone handset to access more than 4,000 live television stations' broadcasts, and television sets connected to the Internet will have a similar capability. People with Internet-connected television will be able to access any of the thousands of television stations in the world that happens to stream their broadcasts online. Many television networks have already begun streaming high definition broadcasts into the Internet in anticipation of this trend. The result of this coming decade's wave will be that all information in text, audio, and video formats will be instantly available to the majority of the world's population wherever they are.

Thus during the past 30 to 40 years the cumulative effect of these waves of technological change is that for the majority of humanity access to news and information is changing from scarcity to surfeit. People aren't switching their media consumption from analog to digital *for the sake of digital*. Indeed, most find reading a newspaper, a magazine, or a book to be easier on paper than via a computer screen; or watching a television program on a television set or a movie on a theatrical screen to be a better experience than doing so on the smaller surface on a computer screen. The actual reason why people are switching their consumption is because digital gives them *extraordinarily more choices and access to news, entertainment, and information.* This is not only thegreatest development in media since Gutenberg's press; it is the greatest media development in history.

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Security of LFSR Based Stream Ciphers Using Genetic Algorithm: Emerging Technologies of Digital Media:

Ms. Manpreet Kaur*

Abstract:

Stream Ciphers: *It is a symmetric key cipher where stream of plaintext are mixed with a random cipher bit stream (key stream), typically by any logical operation. In the case of stream cipher one byte is usually encrypted at a particular time. In this paper, we combine two technologies, one is Linear Feedback Shift Register (LFSR) and other is Genetic Algorithm (GA). In this research we are proposing to develop an algorithm which encrypts our plain text into cipher text by using Genetic Algorithm. A cipher is a secret method of writing, whereby plaintext is transformed into cipher text. The process of transforming plaintext into cipher text is called encryption; the reverse process of transforming cipher text into plaintext is called decryption. Both encryption and decryption are controlled by cryptographic key parameters. Hence we are using linear feedback shift register with Genetic Algorithm. In this paper we propose a scheme wherein utilization of GA is explained with the help of LFSR. Here we have to develop two algorithms, one for sender side and another for receiver side.*

Keywords: *Cryptography; Cryptanalysis; Genetic Programming; Genetic Algorithm; Linear Feedback Shift Register (LFSR); RC4 Algorithm; Crossover; Mutation.*

Introduction

Cryptology is the science and study of systems for secret communications.

It consists of two complementary fields of study:

i. **Cryptography**, the design of secret communications systems and ii. **Cryptanalysis**, the study of ways to compromise of secret communications systems. Cryptology primarily has been applied in military and diplomatic communications systems, but other significant applications are becoming apparent. As computer networks gain popularity, more and more sensitive information is being transmitted over channel where eavesdropping and message interception are possible. To keep such sensitive information secure, we need mechanisms to allow a user to protect data transferred over the network. A cipher is a secret method of writing, whereby plaintext is transformed into cipher text. The process of transforming plaintext into cipher text is called encryption; the reverse process of transforming cipher text into plaintext is called decryption.

There are two types of cryptographic schemes available on the basis of key.

Symmetric key Cryptography: This is the cryptographic scheme which uses a common key for enciphering and deciphering the message. We can also classify symmetric key cryptography into two types on the basis of their operations as **Stream**

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Ciphers: It is a symmetric key cipher where stream of plaintext are mixed with a random cipher bit stream (key stream), typically by any logical operation. In the case of stream cipher one byte is usually encrypted at a particular time. **Block Ciphers:** It is also a symmetric key cipher which operates over a fixed-length group of bits. It usually takes particular bit block of plaintext as input, and produces a corresponding n-bit output block of cipher text.

Cryptanalysis is the science and study of methods of breaking ciphers. It is assumed that the cipher text is sent over insecure communications lines and is available to the cryptanalyst. His aim is to recover the plaintext from the cipher text without knowing the key parameters. A cipher is breakable if it is possible to determine the plaintext or key parameters from the cipher text.

Genetic Programming

One of the central challenges of computer science is to get a computer to do what needs to be done, without telling it how to do it. Genetic programming addresses this challenge by providing a method for automatically creating a working computer program from a high-level problem statement of the problem. Genetic programming achieves this goal of *automatic programming* (also sometimes called *program synthesis* or *program induction*) by genetically breeding a population of computer programs using the principles of Darwinian natural selection and biologically inspired operations. The operations include reproduction, crossover (sexual recombination), mutation, and architecture-altering operations patterned after gene duplication and gene deletion in nature.

Genetic programming is a domain-independent method that genetically breeds a population of computer programs to solve a problem. Specifically, genetic programming iteratively transforms a population of computer programs into a new generation of programs by applying analogs of naturally occurring genetic operations. The genetic operations include crossover (sexual recombination), mutation, reproduction, gene duplication, and gene deletion.

There are five major preparatory steps for the basic version of genetic programming. The preparatory steps are the human-supplied input to the genetic programming system. The computer program is the output of the genetic programming system. The first two preparatory steps specify the ingredients that are available to create the computer programs. The third preparatory step concerns the fitness measure for the problem. The fourth preparatory step entails specifying the control parameters for the run. The most important control parameter is the population size. The fifth preparatory step consists of specifying the termination criterion and the method of designating the result of the run. The termination criterion may include a maximum number of generations to be run as well as a problem-specific success predicate.

Flowchart (Executional Steps) & Overview of Genetic Programming

Genetic programming is problem-independent in the sense that the flowchart specifying the basic sequence of executional steps is not modified for each new

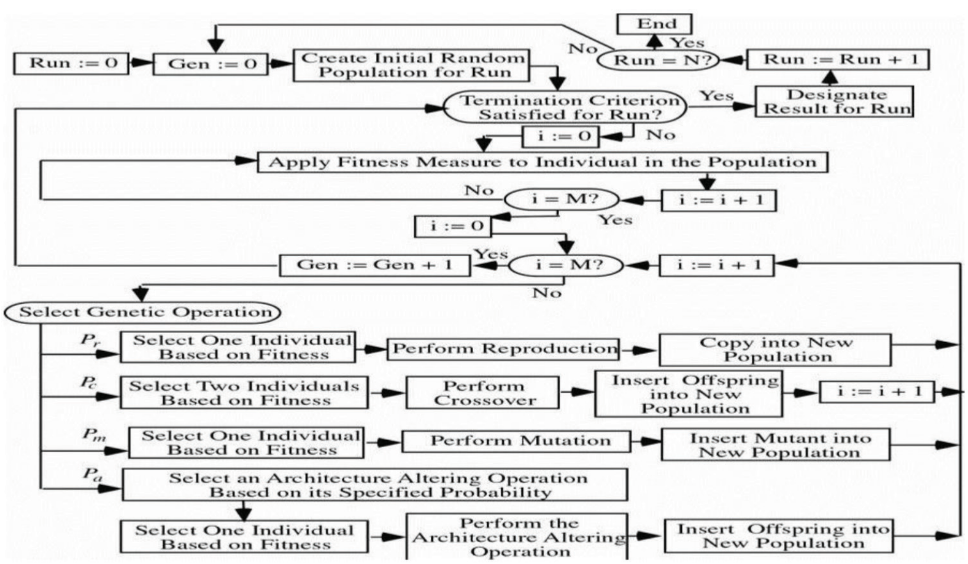

Figure 1: Flowchart (Executional Steps) of Genetic Programming

run or each new problem. Genetic programming starts with an initial population of computer programs composed of functions and terminals appropriate to the problem. The creation of the initial random population is, in effect, a blind random search of the search space of the problem. Genetic programming applies functions and terminals. The initial individuals are usually generated subject to a pre-established maximum size (specified by the user as a minor parameter as part of the fourth preparatory step). Each individual program in the population is executed. Then, each individual program in the population is either measured or compared in terms of how well it performs the task at hand this measurement yields a single explicit numerical value, called *fitness*. The fitness of a program may be measured in many different ways, including, for example, in terms of the amount of error between its output and the desired output, the amount of time (fuel, money, etc.) required to bring a system to a desired target state, the accuracy of the program in recognizing patterns or classifying objects into classes, the payoff that a game-playing program produces, or the compliance of a complex structure (such as an antenna, circuit, or controller) with user-specified design criteria. The execution of the program sometimes returns one or more explicit values. The genetic operations include crossover (sexual recombination), mutation, reproduction, and the architecture-altering operations. These genetic operations are applied to individual(s) that are probabilistically selected from the population based on fitness. In this probabilistic selection process, better individuals are favored over inferior individuals.

After the genetic operations are performed on the current population, the population of offspring replaces the current population. This iterative process of measuring fitness and performing the genetic operations is repeated over many generations. The run of genetic programming terminates when the termination criterion is satisfied. The outcome of the run is specified by the method of result designation. The best individual ever encountered during the run is typically designated as the result of the run. The genetic operations that are performed during the run are designed to produce offspring that are syntactically valid, executable programs. Thus, every individual created during a run of genetic programming is a syntactically valid, executable program.

begin GA

=0 { generation counter } Initialize population P(g)

Evaluate population P(g) {i.e., compute fitness values } while not done do

=g+1

Select P(g) from P(g-1)

Crossover P(g)

Mutate P(g)

Evaluate P(g)

end while

end GA

(Pseudo-code of the standard genetic algorithm)

A Linear Feedback Shift Register (LFSR)

LFSR is a shift register whose input bit is a linear function of its previous state. The only linear functions of single bits are xor and inverse-xor; thus it is a shift register whose input bit is driven by the exclusive-or (xor) of some bits of the overall shift register value. The initial value of the LFSR is called the seed, and because the operation of the register is deterministic, the sequence of values produced by the register is completely determined by its current (or previous) state. Likewise, because the register has a finite number of possible states, it must eventually enter a repeating cycle. However, a LFSR with a well-chosen feedback function can produce a sequence of bits which appears random and which has a very long cycle.

Applications of LFSRs include generating pseudo-random numbers, pseudo-noise sequences, fast digital counters, and whitening sequences.

How It Works

The list of the bits positions that affect the next state is called the tap sequence. In the Figure 2 below, the sequence is [16, 14, 13, and 11].

The outputs that influence the input is called taps (white in the diagram below).

A maximal LFSR produces an n-sequence (i.e. cycles through all possible states within the shift register except all zero bits), unless it contains all zeros, in which case it will never change.

The sequence of numbers generated by a LFSR can be considered a binary numeral system just as valid as Gray code or the natural binary code. The tap sequence of an LFSR can be represented as a polynomial mod 2. This means that the coefficients of the polynomial must be 1's or 0's. This is called the feedback polynomial or characteristic polynomial.

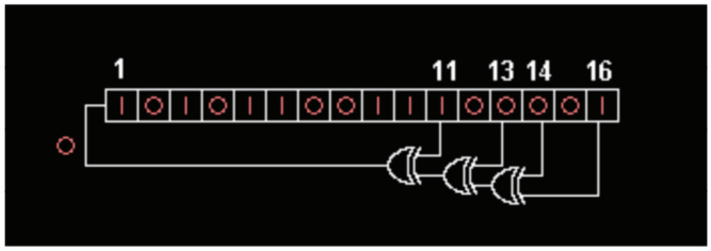

Figure 2: Working of LFSR.

For example, if the taps are at the 16th, 14th, 13th and 11th bits (as below), the resulting LFSR polynomial is $x^{11} + x^{13} + x^{14} + x^{16} + 1$

The 'one' in the polynomial does not correspond to a tap. The powers of the terms represent the tapped bits, counting from the left.

If (and only if) this polynomial is a primitive, then the LFSR is maximal

The LFSR will only be maximal if the number of taps is even

The tap values in a maximal LFSR will be relatively prime

There can be more than one maximal tap sequence for a given LFSR length

Once one maximal tap sequence has been found, another automatically follows. If the tap sequence, in an n-bit LFSR, is [n,A,B,C],

Then the corresponding 'mirror' sequence is [n, n-A,n-B,n-C]. So the tap sequence [32, 3, 2, 1] has as its counterpart [32, 29, 30, 31]. Both give a maximal sequence.

Output Stream Properties

Ones and zeroes occur in 'runs'. The output stream 0110100, for example consists of five runs of lengths 1, 2,1,1,2, in order. In one period of a maximal LFSR, 2n — 1 runs occurs (for example, a six bit LFSR will have 32 runs). Exactly 1 / 2 of these runs will be one bit long, 1 / 4 will be two bits long, up to a single run of zeroes n — 1 bits long, and a single run of ones n bits long. This same property is statistically expected in a truly random sequence.

LFSR outputs streams are deterministic. If you know the present state, you can predict the next state. This is not possible with truly random events such as nuclear decay.

Applications

LFSR's can be implemented in hardware, and this makes them useful in applications that require very fast generation of a pseudo-random sequence, such as direct-sequence spread spectrum radio. The Global Positioning System uses a LFSR to rapidly transmit a sequence that indicates high-precision relative time offsets. When computer index or framing locations need to be machine-readable, they are often marked using a LFSR sequence, because LFSR counters are simpler and faster than any other kind of binary counter. LFSRs are faster than natural binary counters and Gray code counters.

Review of Literature

Reviewing academic literature in a research area is a necessary work for providing contributions, taxonomy, research frameworks and signifying open research areas, as well as future research directions.

MANIKANDAN.G, MANIKANDAN.R, RAJENDIRAN.P, KRISHNAN.G, SUNDARGANESH.G (JATIT June 2011) in "An Integrated Block And Stream Cipher Approach for Key Enhancement" propose a method of combining block and stream cipher for increasing the key strength so that it will be very hard for the intruder to break the key and intruder will have no idea about the key formation from the combination of block and stream cipher. So it will lead to increased key complexity which obviously results the intruder nothing else than confusion and frustration.

SUN Jing, YANG Jing-yu, Fu De-sheng (International Conference on Information Science and Engineering (ICISE 2009)) in "**Research on the Security of Key Generator in Stream Ciphers"** discussed the security of the LFSR and nonlinear combining functions as two core components of key generator. The models studied in this paper include linear shift register sequence, Geffe sequence, shrinking feedback sequence and widespread to the general nonlinear combining sequence.

A. Tragha in 2007, proposed a new encryption algorithm using genetic algorithm approach. The only related work is the attack of the asymmetric ciphering ¯Knapsack Cipher. This is inspired by the resolution of back bag problem. Thus efficiency genetic algorithms have been proven in cryptanalysis. The problem of ciphering a message M is modeled as a combinatorial optimization problem. Then a genetic solution based on the method used to solve the traveling salesman problem (TSP) is also proposed. In the second system SEC-EX, for scrambling plaintext, they introduce a new technique, which consists to encode plaintext in binary, chooses randomly an integer k and cuts plaintext into blocks of size k. These blocks are treated in the same way that the characters constituting the plaintext in SEC.

Aaron GARRETT, John HAMILTON and Gerry DOZIER in 2007 (INTERNATIONAL JOURNAL OF INTELLIGENT CONTROL AND SYSTEMS) In **"A Comparison of Genetic Algorithm Techniques for the Cryptanalysis of TEA"** they extended the work of Hernandez, et al, in which genetic algorithms are used to solve the problem of determining whether a given cipher produces random output. We show that carefully tailored genetic algorithms are capable of finding efficient distinguishers for ciphers much faster than has previously been reported.

M. Husainy in 2006 proposes Image Encryption using Genetic Algorithm based Image Encryption using mutation and crossover concept.

A. Tragha in 2005 & 2006 describe a new symmetrical block ciphering system named ICIGA (Improved Cryptography Inspired by Genetic Algorithms) which generates a session key in a random process. The block sizes and the key lengths are variable and can be fixed by the user at the beginning of ciphering. The user can fix the size of the blocks as well as the length of the key. The operation of ICIGA depends on the length of the secret key selected by the user. ICIGA uses this length to divide the plaintext into parts of equal size. During the ciphering, the first part is broken up into blocks of the same size which are used to generate the secret key. This key will then be used to cipher the other parts of the message. The genetic operations of crossover and mutation used for ciphering in GIC are improved by the new system ICIGA as follows:

A left shift is added to each block that is processed, and - Another left shift is added to the part being processed after the processing of its last block. The goal of these shifts is to reinforce resistance to cryptanalysis, and in particular to techniques of exhaustive search.

Existing System

Rc4 Algorithm

RC4 is a synchronous stream cipher designed to satisfy both security and efficiency for lightweight algorithms, dedicated to hardware environments where the usage of resources are restricted. In general, Stream ciphers like RC4 have fragileness on the key size. If the key size is too short then the attacker can easily obtain the key by using one of the existing key recovery algorithms. Stream cipher is the important class of encryption and they encrypt each digit of plain text one at a time using a simple enciphering transformation. Rc4 is most widely used stream cipher nowadays due to its simplicity and high efficiency. Rc4 usually has varying key size and key size of stream cipher based on a 256 byte internal state and two one byte indexes I and J. The operation of Rc4 comprises of two phases namely key scheduling algorithm and pseudo random generation. The key-scheduling algorithm consists of following steps. In order to generate a key we should start the permutation in the Array S. Here the term Key length can be defined as the number of bytes in the key which usually is of a range 1 _ key length _ 256.

```
for (i=0;i<=255;i++)
S[i] = I;
j = 0;
for (i=0;i <=255;i++)
{
j = (S[i] + i + key[i mod key length]) mod
256;
swap (S[i], S[j]);
}
```

The Pseudo random generation algorithm changes the state and particular outputs a byte over the key stream. In each iteration, the PRGA increments i, adds the value of S pointed by i to j.

```
i = 0;j = 0;
while
{
i = (i + 1) mod 256;
j = (j + S[i]) mod 256;
swap( S[i], S[j] );
K = S[(S[i] + S[j]) mod 256];
}
```

Analysis

With reference to the above study of literature it is imperative that in recent past not a large amount of work has been done in the field of stream ciphers by using Genetic Algorithms. This family of stream ciphers uses a single or several LFSR and a filtering function **F : GF (2)n GF (2)^{m}** to generate the blocks of **m 1** key stream bits at the time. In this paper, the LFSR along with genetic algorithm based of information security has been discussed, and a new approach has been proposed. For transmitting the secured data over the channel there is requirement of the high throughput, in these cases the conventional encryption techniques are not a feasible solution for this reason a high throughput and secure encryption technique is proposed for real time data transmission like over the telephone link or video transmission. The concept of Genetic Algorithms used along with the LFSR. This total way of transferring secret information is highly safe and reliable.

Proposed System

In this paper, we propose a new system for increasing the complexity of stream cipher by using the linear Feedback Shift Register (LFSR) along with Genetic Algorithm (GA).

LFSRs have long been used as a pseudo-random number generator for use in stream ciphers (especially in military cryptography), due to the ease of construction from simple electromechanical or electronic circuits, long periods, and very uniformly distributed outputs. However the outputs of LFSRs are completely linear, leading to fairly easy cryptanalysis.

Three general methods are employed to reduce this problem in LFSR based stream ciphers

Non-linear combination of several bits from the LFSR state;

Non-linear combination of the outputs of two or more LFSRs; or

Irregular clocking of the LFSR.

Important LFSR-based stream ciphers include A5/1, A5/2, E0 and the shrinking generator.

Here, our main interest is to combine two technologies LFSR and genetic algorithm.

At sender side:

Make function f(x) = x*x +1, where x is the prime number in sequence which is starting from 1 and from here we get 7 values of function(x) =x*x+1 for seven prime numbers, and it acts as a 7 IVs for 7 LFSR.

Function f(x) =x*x+1,act as a symmetric key

From each LFSR we get output stream of seven bits. So, from seven LFSR we get 7 * 7=49 bits from 7 LFSR.

From seven outputs which currently in a binary form, convert it into alphanumeric form &now we have 7 alphanumeric digits.

Out of 7 bytes select those bytes which have the property of prime number (it is the fitness function of genetic algorithm).

Convert again the prime numbers into binary form.

Then perform operation of genetic algorithm, such as crossover, crossover the above digits up to first three digits of each bytes.(it is also work as a symmetric key)

Then perform another genetic operation that is mutation, mutation on 2nd and 4th digit. (it is also work as a symmetric key)

Lastly, XOR the plain text to the mutation byte.

At receiver side:

Here, we have function f(x)=x*x+1, because it is a symmetric key, and it is also known that value of x is prime number in sequence which is started from 1. so, from this we get values of 7 IVs for 7 LFSR.

Now convert output of 7 LFSR into alphanumeric form.

Apply fitness function (choose prime numbers among all numbers) of genetic algorithm on the 7output of LFSR.

Again convert the choosing alphanumeric digits into binary form.

Now perform genetic operation crossover, which is known here because it is a symmetric key.

Apply second genetic operation that is mutation, which is also known here because it is also a symmetric key.

Conclusion

In this paper we discuss two approaches viz genetic algorithm and Linear Feedback Shift Register. We have proposed a scheme where Genetic Algorithm is used with LFSR for increasing the complexity of stream cipher. This paper also shows sending and receiving side algorithms. Another opportunity for improvement may be to experiment with other evolutionary computation techniques (rather than genetic algorithms), which may be more suitable for this problem. However, there are several modifications that could be made to improve the performance of the genetic algorithm. One such approach would be to use uniform crossover, rather than single-point crossover.

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