# Impact of Virtualized Management on Industrial Sector

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**Abstract**— The term "Virtual" indicates something not exists in real world in physically but anyhow it fulfills the requirements of real things. In general, it distinguishes something that is merely conceptual from something that has physical reality. Using computing technology a system could be developed as alternate of a practical which is known as virtual system. We can find lot of things changed now into virtual world. Playing games using a computer was a passion but now we can see that most of kids made computer as their playground. Once people used internet chat rooms only to pass messages but now online messaging, who thought that in this are this online messaging system will be a strong alternative of verbal communication. The society turned into virtual society which is known to us social media. Virtual reality is no more imagination now, it exists now a days and it is becoming the alternative or real things. Similarly virtual system introduced into industrial management gradually when the management system was being done by computerized system. Virtual office system and paperless office system is being used vastly inside industrial management. In this paper we pull out the utility and advantage of virtualization of management in industrial sector. We also got some negative impact of virtualized management. In some aspect, virtualization of management has some good point that it replacing extra human resources, eliminating hardware, tools, physical space and geographical barrier which results lower cost in industrial management. Due to virtual management the processing system of management became fast which increase the management efficiency. We studied on time study after applying virtual management inside industries. In the other hand, virtualization of management causing some bad impact like unemployment, lack of verbal communication, lack of social and inter employee bond. We mentioned the current status of virtualization in industrial management and what would be in future. This paper will revealed the scenario of virtualization inside industrial management.

**Index Terms**— Industrial, Management, Virtual, Advanced, Operation, E-managemnt, Automation

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## 1 INTRODUCTION

Virtual industry model consist of some modern technology, tools and some new ideas. It is an alternate solution for establishing an industry, business startup. Our model refers a complete industry without owning a physical industry, land and other expensive infrastructure. Entrepreneur can fulfill their dream to establishing an industry using this model. Now a day we can see that freelancing, outsourcing is most popular working process in IT field where people can work for any industry situated at far away staying their home. Even outsourcing is on of most spread working method. This "Virtual Industry Model" is such kind of industry where people (designers, engineers, manager, and other employee) can perform their task from their residence or any place using some modern technology like computers, mobile etc. So the industry based on our model doesn't require any big office space. Now the question is where will be the production? We know that there has a production method using rental or contractual industry. This reduces a big fixed cost of setup an industry and variable cost to maintaining that industry. It is also costly to hire an expert fulltime for industrial research and development purpose to design and implement new product ideas. Otherwise it is possible to hire expertise as they can work for our industry from his/her place anytime for less remuneration as pert time worker. He needs to login his management system and fulfill his given task what will be explained later. The total system works using software which named "Virtual Industry System". The software contains strong database system and other computing method as required for an industry.

## 2 "VIRTUAL OFFICE" INSIDE INDUSTRIAL OPERATION

## MANAGEMENT

A virtual office is a business location that exists only in cyberspace. A virtual office setup allows business owners and employees to work from any location by using technology such as laptop computers, cell phones and internet access. A virtual office can provide significant savings and flexibility compared to renting a traditional office space. Meetings can be conducted via teleconferencing and video conferencing, and documents can be transmitted electronically. Some companies even provide virtual office services to give virtual offices the prestige associated with physical offices, such as an important-sounding address, a professional phone-answering service and even occasional rental of office space and conference rooms.

### 2.1 ELEMENTS OF VIRTUAL OFFICE SYSTEM

**1. Email Communication**

Email remains an essential virtual office tool for professional communication and it doesn't look like it will be replaced anytime soon. Your email client should be set up to automatically filter your mail, it should make it easy for you to tag and sort mails, and you should be able to access your mail online in case something happens to your computer. Gmail, YAHOO, Hotmail is the most used email tools.

**2. Organizer**

No virtual office is complete without a calendar to remind you of deadlines, events, and appointments. Due to its seamless integration with GMail I use Google Calendar. Many people use their smart phone's organizer and planning tools

as an element of virtual office.

### 3. Direct Communication

It's important to connect with people. Direct communication via IM, voice, phone, or video calls also helps to relay information more efficiently than through an email. Either way, you will need to communicate directly with colleagues or customers. Skype covers the entire direct communication bandwidth. You can use it to instant message, voice or video chat, and call a phone number.

### 4. Online File Storage & Sharing

If your office is not only virtual, but also in The Cloud, you need a reliable online file storage tool. You might also need a tool to exchange or collaboratively work on documents with your partners. Dropbox can do all that and more. Onedrive, Google drive also a famous tool for online file storage and sharing.

### 5. Hardware

Finally, let me briefly mention hardware that will come in handy. You obviously need a computer and possibly a mobile phone. The device selection will largely depend on personal preferences or maybe you are going to rely on public computers entirely. Either way, there are two pieces of accessory hardware you should consider flash drive, pen drive to share official work.

## 3 VIRTUALIZED INDUSTRIAL MANAGEMENT AS ENHANCEMENT OF VIRTUAL OFFICE

A smart move that can save entrepreneurs money and at the same time implement the latest in technology and management resources is the virtual office. Very simply, a virtual office is one where employees may no longer be housed on site; in fact, they could be spread across the country or even the world. The term "virtual conversations" illustrates the idea perfectly conversations that take place via instant messaging or on social networking sites such as Facebook, MySpace and chat rooms. In virtual office, employees work out of their own homes, a rented office space or a larger, shared office building. Rather the virtual office contains a computer, printer and fax machine, among other equipment. Often the computers have webcams which allow video conferencing. For meetings, many employees use software such as "GoToMeeting" that enables them to see each other's computer screens without leaving their own desks, even if the meeting is taking place thousands of miles away. This way, an individual can work with others and actually share their screen. This helps members linked in to the meeting to view slides or software from various sites. Webinars use this process to reach out to a large number of participants at the same time. In Webinars, meeting attendees can also use their telephones to talk to the presenter or moderator and sometimes to each other. The cost of this equipment is more than offset by the savings realized by not having to pay travel expenses, site rentals or office space rent. Many employees say they enjoy being almost totally responsible for themselves with no boss or supervisor hanging around their desk, looking over their shoulder or pressuring them for work results. Many employees who prefer the independence of working alone in a virtual environment say they're spared the bother, distraction and negative office politics found in the

traditional office setting. A virtual office in this era of cost-cutting can save you a great deal of money. However, the prospective virtual entrepreneur needs to enter into this state-of-the-art management concept with goals of hiring the most appropriate employees and creating a fail-safe process. People developed a new tool that can perform like virtual office system, using that tool entrepreneur and existing business owner will be able to run their industry eliminating several elements of a typical industry like office space, manual business communication, less employee. The existing virtual office system works with many tools. This became difficult for the corresponding to accumulate all of those and work with them, due to such technical difficulties virtual management system is not enough popular. To overcome such difficulties people designed new integrated software which is enhancement of virtual office and those tools are making industrial management virtualized. This software is the core element of our virtual model. Industrial management authority will be able to fulfill their requirements to use too many tools for modern operation management and communication using the "Virtual Office" software of our proposed virtual industry model. This system known as "Virtual Industry Model" because we can start a new industry in virtual world without any physical place but the corresponding people of several department of the industry can perform their job using virtual model. For example an entrepreneur wants to start a business with a nice idea but he doesn't have enough capital to rent an office space and hire official staff. Very easily he can use the virtual industry tools to launch hi office. Communicate among co-worker using the virtual office software. It is possible to work together from any geographical area using our model, no need to rent an office to start a new business idea and finally no 3rd class employee need to carry files, documents to one table to another desk. Simply login, create the task which would be assigned to others, select his name and click. Within the same time the selected co-worker will receive a notification and he will start the task. In traditional system this process will take a long time and more human resource to finish. This is the way to start working in virtual space, making a virtual work environment can connect the components to establish a new industrial business. Which is known as virtual industry model or virtualized industrial management.

## 4 IMPACT OF VIRTUALIZED MANAGEMENT TO REDUCE LAND/OFFICE SPACE RELATED COST OF MANAGEMENT

Virtualized management system has no physical existence comparatively others tools but it exists. It is an online software like web portal which could be access from anywhere in the world. According to our design user/employee can login his/her account as like he is sitting on his desk at office. Typically people gather in a common place which known as their work place or office, we saw from the above that this office space costs big investment related money that effects on business startup for entrepreneur or any running business. Armament of a virtual environment for employees to get their job and do it from his/her own place that can reduce cost to rent or buy office space. The system needs only internet con-

nection and a personal computer to get access in virtual office, it has a nice opportunity to work from remote location even from foreign country or a same apartment. A single computer will be more than a computer but an office desk. So less office space will used, cost will be less.

## 5 HOW VIRTUAL INDUSTRIAL MANAGEMENT REDUCING BUSINESS COMMUNICATION RELATED COST

Good communication practices are at the heart of every successful business. Communication serves two essential functions in every organization. It disseminates the information needed by employees to get things done and builds relationships of trust and commitment. Without it, employees end up working in silos with no clear direction, vague goals and little opportunity for improvement. Successful projects and change programs are a rarity and real leadership is scarce. Not long ago, the ability to communicate well was viewed as a "soft" skill that was nice to have, but considered not really necessary. In today's rapidly changing business climate, it's a mandatory requirement for everyone, from top level executives to the people on the shop floor. Organizations that fail to convey clear strategies and processes and engage employees in shared goals are likely to lose to companies with more effective communication practices. Effective communication is the key of operation management. Physically meeting, voice communication is mostly used medium to communicate among management, employee and client. In many situation if we have any alternate way we can avoid this physically meeting method, like when we need to send a finished worked that could be a soft copy in a pen drive or CD, we send a peon to colleague even his desk could be beside my room! In such situation virtualized management works perfectly to because it is computerized. It has some functionality that employees, managers and clients can send message, share documents, arrange group meeting in virtual space from anywhere so we can use less manpower, very fast communication, less lead time to complete assigned job.

## 6 ADVANTAGES OF VIRTUALIZED MANAGEMENT

The goal of a paperless office continues to get closer, due to the rising popularity of digital document management systems. Document management systems use scanners to make digital copies of every document. These documents are coded to attach them to specific files or accounts and optical character reading, OCR, systems provide insight into the contents of each page. From the time it enters the organization, the digital version of the document is stored and filed for future use.

### 1. Easy Access

From the moment the document is scanned, it becomes accessible from any computer by an authorized employee. Compare this immediate access to a traditional paper file, which has to be housed in a file cabinet or room and then must be must be requested, retrieved and delivered to an employee. During its use that paper file cannot be accessed by another employee, nor is it easily tracked during its journey. Electronic documents can be retrieved immediately, shared and routed to any employee who needs it.

### 2. Searchable Text

When a document is scanned, OCR examines the text and creates a digital version of the contents. This text is stored with the document, creating a file that can be searched by any employee. If a company needed to find every file that mentions a particular client, they could search the document database for every mention of that name. This turns ordinary files into huge databases of information that can be used for marketing, audit and management purposes.

### 3. Cost Savings

The switch to electronic documents can be a tremendous cost-saving opportunity for most companies. The cost for filing cabinets, supplies and the real estate required to store them on site is substantial. If a company uses an off-site storage facility the cost to store and retrieve files is equally expensive. Add to this the cost for filing clerks and the downtime required to find specific files and the price of a manual filing system is substantial. With digital systems, there is a cost for the scanning and filing technologies, but once digitized, the cost for data storage is quite low.

### 4. Say goodbye to commuting problems

Don't you just hate it when your staff is always late due to heavy traffic? If you let him work as a virtual assistant, you can be sure that he can report to work on time. Even if you are the boss of your own company, you understand how difficult it is to drive or commute to work. With a virtual office, you can increase your productivity and become more focused at work.

### 5. Less overhead

There's no office lease, no utility payments, no hardware and none of the associated costs that come with having a brick-and-mortar space. All that savings can not only be passed along to clients, but it also affects your profit margin, allowing you to invest more in your people.

### 6. Security of documents

The difficult task of securing confidential information is simplified with a digital document management system. Whereas paper files need to be stored in secure cabinets and controlled using a manual access system, electronic documents are easily encrypted with access controls using passwords and an authentication system. Electronic files never go missing, nor do they easily fall into the wrong hands.

### 7. Productivity increases.

Because you go from monitoring when people arrive to work and when they leave to establishing specific goals, you'll see an increase in productivity almost immediately. If employees meet or exceed their goals, they keep their jobs. If they don't, you'll quickly see that and be able to weed them out because no one is around to save them. Letting employees work remotely should also decrease turnover because people are generally happier to be able to do their jobs and not have to deal with the drama that comes along with putting a bunch of people in an office together.

While the virtual office doesn't work for every business many companies need people together in one location to get work accomplished in those businesses where technology truly allows you to work from anywhere, a virtual office offers a strong alternative to a traditional office environment.

## 7 DISADVANTAGES OF VIRTUALIZATION OF MANAGEMENT

**1. Cause sudden termination and a greater chance of jobs being outsourced:** outsourcing jobs Now that the organization does not have to worry about the location of the employees, chances are that they may outsource jobs to countries where they would not have to pay much. This will mean lesser job opportunities.

**2. A chance of losing out on promotions:** A disadvantage with Virtual Office Workers can be that since they are not anywhere in the proximity of the office bosses, where their social skills and communication expertise can be tested, virtual office workers may get a lesser chance of being promoted.

**3. They may not be accessible that promptly:** Though bosses can be in touch with virtual office workers through modern technology such as video conferencing or through internet, there can be occasions when a sudden meeting with the virtual assistants or workers might not be possible in case of any emergency.

**4. The danger of being labeled as unprofessional:** Even though virtual offices are a reality now, if an organization works only with virtual office workers, there is a chance that some clients might consider the organization not too reliable.

**5. Lack of social interaction:** Initiate communication when people spend time with each other in a conventional office, there is camaraderie between them which leads to better working relationship among them. With virtual office workers, this camaraderie does not exist and this can lead to a sense of aloofness among the employees.

**6. Security related concerns:** In a traditional office, data and confidential information are secured but with virtual office workers, the office not being in a secured or permanent space, there is a risk of data being in a vulnerable state.

**7. Lesser productivity:** The issue of productivity is often seen both as an advantage and disadvantage factor. Since there is no constant supervision on virtual office workers, and hence no motivation, it can happen that their work output may be reduced.

**8. Less professionalism:** Since virtual office workers work without any boundaries of space, time or rules, there is fear that they may be less professional than regular employees.

**9. Chances of miscommunication are higher:** Communication skill Since there are no face-to-face interaction with the virtual office workers, there can be instances wherein a message can be miscommunicated or a chance that the message has not even reached the person which can lead to work related issues.

**10. Too much dependence on technology:** Virtual office workers tend to depend too much on technology for their daily work and any disruption in the services of the gadgets or internet facility can mean stopping of work and this can cost a loss to the organization.

**11. Being isolated:** Virtual office workers work in an isolated environment and hence they may feel alone or isolated and may tend to remain out of sync with regular counterparts. This factor may not work well for an organization.

**12. Many do not get the recognition and respect they deserve:** Even today, those who work in conventional offices are considered as professionals and get enough recognition and respect while virtual office workers do not seem to be getting that recognition.

**13. Not all can become virtual office workers:** Only those who can work with minimum supervision, and are honest and who can deliver work on time can be virtual office workers. Those who need constant motivation and a proper office environment should work in a conventional office only.

**14. Team work takes a backseat with virtual office workers:** Team work Virtual office workers work remotely and hence they do not take part much in team meetings or brainstorming sessions. This means the spirit of team work is lesser in virtual office workers.

## 9 LIMITATION OF VISUALIZED MANAGEMENT

Due to some limitation this type of virtual management model software loss attention by user. But we can see that the "Facebook.com" was able to become popular, because people started using it and gradually became depended with the virtual friendship world. If we can fulfill the requirements to established the model we have to consider the following limitations and make those factors positive

- It needs trained worker, the user must have a good computer literacy.
- The system runs over the internet so the organization must have good internet connectivity.
- All type of documents and work related data should be converted into soft version.
- Lazy people can loss their job, because here we don't have any physical monitoring.
- To use the model the company has to install necessary ICT equipment like computer, printer, and network to work using the model. This can make people less interested to start using virtual model.
- Lack of nonverbal communication.
- It will cause lack of social interaction.
- Team spirit could be less than face to face communication.
- Only sincere people are suitable for this model.
- It is must to check the software notification and always keep eyes on screen.

## 10 CONCLUSION

A whole new approach is needed for managing employees in a virtual environment, in order to leverage the benefits associated with remote computing without having them erased by the potential negative aspects. With this in mind, the following are several indicated actions that need to be considered by human resource professionals over the short term to deal with this situation that test employees first. Companies should develop psychological testing programs aimed at determining the profile of the type of person who can work effectively in a remote environment. This would enable them to screen out the people who would not be successful under such an arrangement, keeping them in the main office where they can continue to produce in their position. Transition them over

time, organizations should adopt procedures whereby employees who will be working in a remote environment are transitioned into this type of work situation over an extended period of time. They might begin with one day a week for the first month, and then add a day every other month so that it would take 6-8 months to get them into a fully-autonomous remote environment. This will help both the company and the employee determine whether this is the right situation for them. For virtualized management someone can start an industrial business even with a little amount initial cost. Despite of some disadvantage and bad impact on employment virtualized industrial management can reduce all of the initial high investment related limitations to setup an industry and our feasibility study says that the conceptual industry will perform better than traditional industry. Finally it can be concluded that the future will be based on virtualization in every sector and management is one of key element.

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